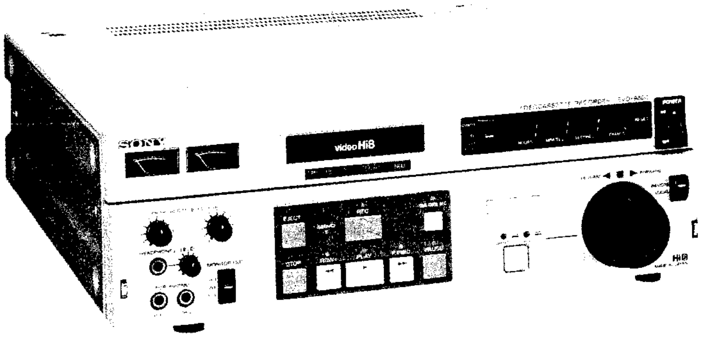
EVO-9800

Hi8

VIDEOCASSETTE RECORDER

Revised-1



SONY
video Hi8
Hi8

SONY®

SERVICE MANUAL

SPECIFICATIONS

System

Recording system	Rotary 2-head helical scan Luminance: FM recording Color signal: converted subcarrier direct recording
Video signal system	EIA standards, NTSC color
Audio recording system	Normal recording AFM: Rotary head, FM system (monaural) PCM: PCM format (two channels)

Video

Inputs	VIDEO IN (BNC type) × 1 1.0 Vp-p±0.3 Vp-p, 75 ohms, unbalanced, sync negative
Outputs	VIDEO OUT (BNC type) × 1 1.0 Vp-p±0.2 Vp-p, 75 ohms, unbalanced, sync negative DUB OUT (7-pin) × 1 MONITOR TV (8-pin) × 1 MONITOR VIDEO (BNC type) × 1
Horizontal resolution	Hi8 mode recording: 400 lines (both B/W and color)
S/N	Hi8 mode More than 45 dB Conventional format More than 45 dB (color)
Sync signal input	SYNC IN (BNC type) × 1 2.5 Vp-p (1 to 5 Vp-p), 75 ohms, unbalanced
Recording level control	Automatic

Audio

Input	AUDIO LINE IN CH-1/L, CH-2/R (XLR 3-pin female) × 1 each +4 dB, 10 k ohms, balanced MICROPHONES CH-1/L, CH-2/R (phone jack) × 1 each −60 dB, 3 k ohms, unbalanced
Outputs	AUDIO LINE OUT CH-1/L, CH-2/R (XLR 3-pin male) × 1 each +4 dBm (at 600 ohm load), balanced MONITOR AUDIO (phono jack) × 1 −5 dB (at 47 k ohm load) MONITOR TV (8 pin) × 1 HEADPHONES (stereo phone jack) For 8-ohm headphones Level adjustable (from −26 to −46 dB)
Frequency response	AFM: 30 to 15,000 Hz ±3 dB PCM: 20 to 15000 Hz (both audio channel 1 and 2)
Dynamic range	PCM: more than 80 dB
Recording level control	Manual or limiter selectable
PCM sampling frequency	31.5 kHz

Other functions

Pause	A still picture is obtained with long pause function
Search	Still, 1/30 to 19 times normal speed in forward direction; 1/30 to 17 times normal speed in reverse direction
Sync system	Automatic switching between internal and external
Dropout compensator	Built-in

Tape transport

Tape speed	14.3 mm/sec.
Recording and playback time	Approx. 120 minutes (in SP mode)
Fast forward and rewind time	Within 3 minutes (with E6-120/P6-120)
Tape compatibility	8 mm video cassette tapes
Usable tapes	E6-HME, P6-HMP, P6-MP series and equivalent

General

Power requirements	Rated voltage: 100 − 120 V AC, 50/60 Hz Operating voltage: 90 − 132 V AC
Power consumption	50 W
Operating position	Horizontal (up to 20 degrees)
Storage temperature	−20°C to +60°C (−4°F to 140°F)
Operating temperature	5°C to 40°C (41°F to 104°F)
Dimensions	424 × 146.5 × 452 mm (w/h/d) ($16\frac{3}{4} \times 5\frac{7}{8} \times 17\frac{7}{8}$ inches) not including projecting parts and controls
Weight	Approx. 14 kg (30 lb 14 oz)
Supplied accessories	AC power cord (1) Operating instructions (1)

Design and specifications are subject to change without notice.

Recommended video equipment and accessories

Editing Control Unit RM-450, RM-440 (when the BKU-703A installed)
Color Video Monitor Sony CVM and PVM series
Color Video Camera Sony DXC series
33P Editing Interface BKU-703A
Remote Control Unit RM-500, RM-580 (when the BKU-703A installed)
Cleaning Cassette V8-25CLH
Remote Control Cable RCC-5G (9-pin), RCC-5F (33-pin)
Dubbing Cable VDC-5 (5 m)
Monitor Connecting Cable VMC-3P (3 m), VMC-5P (5 m), VMC-10P (10 m)
Multi Remote Control Unit RM-555 (when the BKU-703A installed)
Video and Audio Switcher BVS-500
VTR Selector RM-V5
Rack Mount Kit RMM-980

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SECTION 1
GENERAL DISCRIPTION

1-1. FEATURES

High-quality picture in Hi8 video system

Thanks to the Hi8 video system, picture quality of 8mm video system is extremely improved. A metal tape with large magnetic energy allows high-density recording, and makes it possible to record and play back a high-quality picture.

Automatic editing system

Using the EVO-9800, an automatic editing system can be composed together with an RM-450 editing control unit and a VO-9850 U-matic VTR. The EVO-9800 functions as a player in this system, which allows high-quality and precise editing of the program recorded with a compact and light-weight 8 mm camcoder.

Chroma noise reducer

Thanks to a digital chroma noise reducer, a life-like color reproduction will be possible. The chroma noise reducer can also eliminate the jitter so that a stable playback picture can be obtained.

Hi-Fi sound with the AFM and PCM recording

A monaural AFM recording and two-channel PCM recording with wide dynamic range can be simultaneously executed. Cannon XLR 3-pin connectors usually used for professional audio equipment are employed for the audio inputs and outputs.

Recording and playback of the 8 mm time code

The 8mm time code can be recorded on a tape on which video and audio signals have been recorded. The 8 mm time code being played back is transferred to the RS-422A serial interface time code data, and output from the REMOTE 1 (9P) connector. Using this time code data, precise editing will be possible.

Search operation

A search dial with the shuttle and jog functions is furnished. In shuttle mode, playback pictures can be viewed at various speed from 1/30 times to 19 times normal speed in forward direction, or from 1/30 times to 17 times normal speed in reverse direction as well as in a still mode. In jog mode, playback pictures from still to ±1 time normal speed can be viewed.
As the playback can be performed in both forward and reverse directions, any desired scene can be easily found.

LED time counter

The time counter indicates the tape running time and the 8 mm time code in hours, minutes, seconds and frames by the LEDs. These are useful to check the recording time of a material and the current tape position.

Remote control

The unit is equipped with a 9-pin remote control connector. When the equipment which has a 9-pin remote connector such as an RM-450 editing control unit, is connected here, the EVO-9800 can be remotely controlled with this unit. When a BKU-703A 33-pin editing interface (optional) is installed in the EVO-9800, it can be remotely controlled by the equipment with a 33-pin remote connector such as an RM-440.

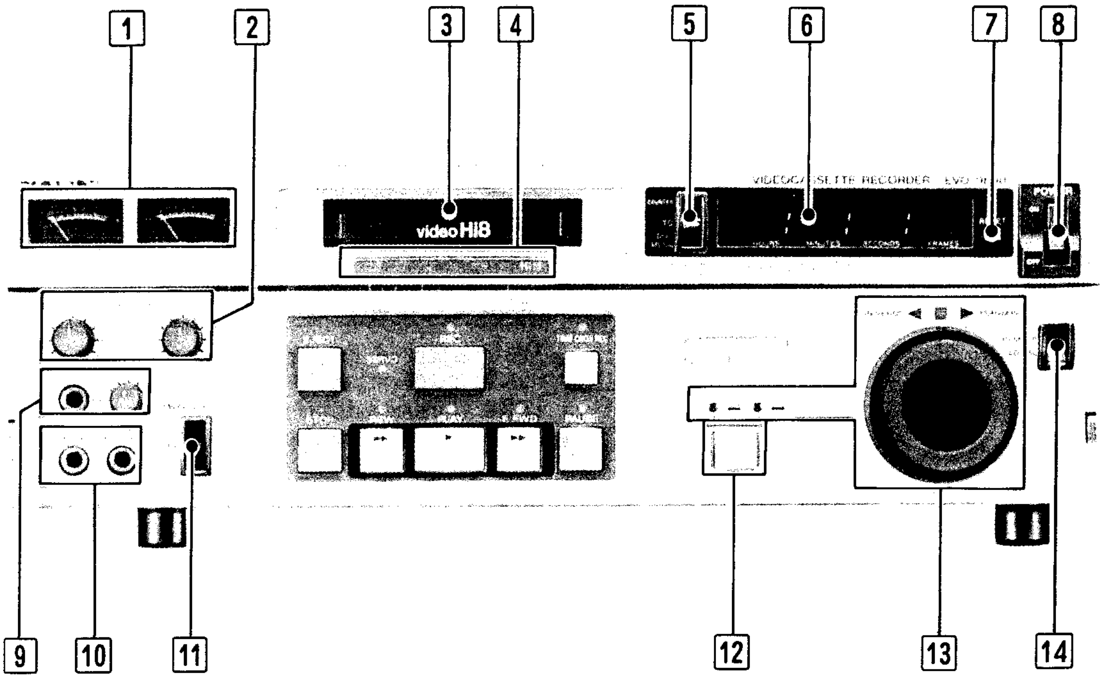
Dial menu operation

With the search dial, you can change the setting values for the 8 mm time code and others.

Dubbing connectors

A connector for duplicating video signals for a U-matic VTR is furnished.

1-2. LOCATION AND FUNCTION OF PARTS AND CONTROLS
(FRONT PANEL)



[1] **Audio level meters**
Audio recording level is shown in recording, and audio playback level in playback.

[2] **AUDIO LEVEL controls**

[3] **Cassette compartment**

[4] **Indicator section**

📼	Lights when a cassette is in the cassette compartment.
AUTO OFF	Lights at power-on when moisture is condensed inside the unit. While this indicator is lit, a cassette cannot be loaded.
STANDBY	Lights while a tape is being threaded from or unthreaded to the cassette inside the unit.
TC	Lights when 8 mm time code is being recorded, or when the tape on which 8 mm time code is recorded is played back.
PCM	Lights when PCM sound is recorded on the tape or during PCM audio recording.
SP*	Lights when the tape speed is in SP (standard play) mode.
Hi8*	Lights when the tape is recorded in the Hi8 video system.

* The SP and Hi8 indicators will light when the power is turned on, and when a tape not recorded in SP or Hi8 mode is inserted, the corresponding indicator will go out.

[5] **COUNTER/TC/DIAL MENU selector**
Selects what is displayed in the time counter display [6] as follows.

COUNTER	Displays time period of tape travel in hours, minutes, seconds and frames.
TC	Displays 8 mm time code.
DIAL MENU	The unit goes into the dial menu operation mode and the dial menu will be displayed. In this mode, any other functions are deactivated.

Note

You can put the EVO-9800 in the dial menu operation mode with the REMOTE/LOCAL selector [14] set to LOCAL, only when a cassette is not inserted or when the unit is in the stop mode.

[6] **Time counter display**
Displays the item selected by the COUNTER/TC/DIAL MENU selector [5].

[7] RESET button

When the COUNTER/TC/DIAL MENU selector [5] is set to the COUNTER position and the time counter display [6] shows the time period of the tape travel, press to reset the time counter to 0:00:00:00.

[8] POWER switch

[9] HEADPHONES connector (stereo phone jack), HEADPHONES LEVEL control

[10] MICROPHONES CH-1 and CH-2 connectors (phone jacks)

[11] MONITOR OUT switch

Select the sound to be monitored through headphones or a speaker of a video monitor.
The sound selected by the OUTPUT SELECT switch on the subpanel is selected as follows:

CH-1	To hear the channel-1 sound only
MIX	To hear the sounds both on channels 1 and 2*
CH-2	To hear the channel-2 sound only

* When stereo headphones are used, the sound of channel 1 will be heard from the left unit and the sound of channel 2 from the right unit. When a monitor speaker connected to the MONITOR AUDIO or TV connector is used, mixing sound of both channels 1 and 2 will be heard.

[12] Search button

Press to put the unit in the search mode, and the search operation with the search dial in jog or shuttle mode will be possible.
If the setting of the dial menu number 209 is changed, the unit enters the search mode without pressing the search button.
See "Dial Menu Operation" for details.

[13] Search dial and SHUTTLE/JOG lamps

Functions as a search dial for quickly locating edit points or as a selector for the dial menu operation according to the setting of the COUNTER/TC/DIAL MENU selector [5].

Setting	Function
COUNTER or TC	Search for a scene.
DIAL MENU	Dial menu operation.

The details of the function are as follows:

Search for edit points

Set the COUNTER/TC/DIAL MENU selector [5] to COUNTER or TC, and press the search button [12]. The search dial can make the tape run in jog or shuttle mode. Push in to change from the shuttle mode to the jog mode and push it in again to change back. The corresponding lamp lights to show the current mode. Rotate the dial clockwise to run the tape forward (the ▶ FORWARD lamp lights), and counterclockwise to run the tape in reverse (the REVERSE ◀ lamp lights).
When the tape stops, the ■ lamp lights.

SHUTTLE	Set the dial to one of 16 positions to run the tape at a speed from 1/30 to 19 times normal speed in forward direction, and from 1/30 to 17 times normal speed in reverse direction. A still picture is obtained at the center detent position.
JOG	The dial turns freely. The tape runs at a speed from 0 to 1 times normal speed while the dial is rotated. When the dial is stopped, a still picture is obtained.

Note

When playback at slow speed less than 1/2 time normal speed continues for about 30 seconds in shuttle or jog mode, the playback automatically stops.

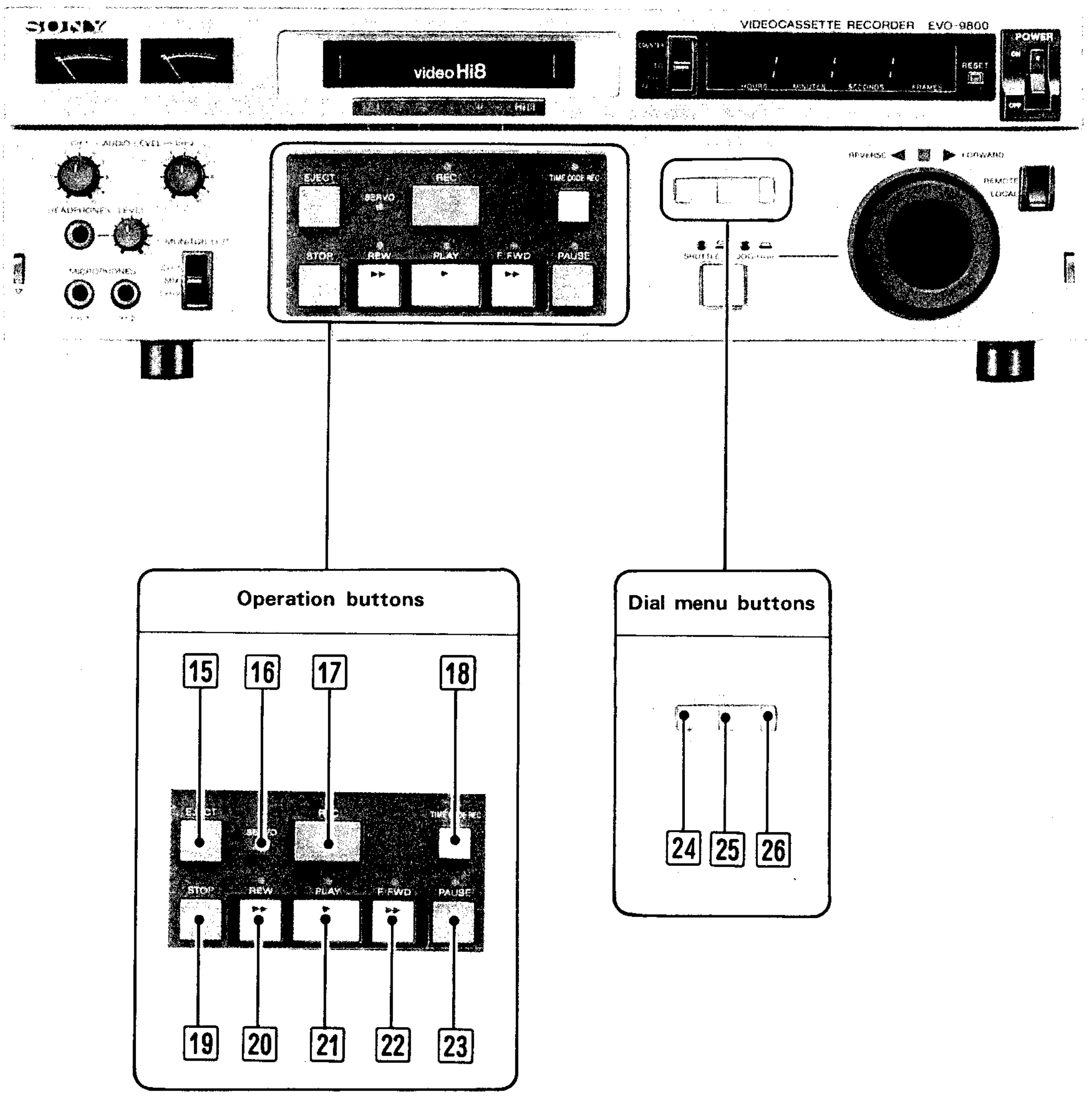
Dial menu operation

Set the COUNTER/TC/DIAL MENU selector to DIAL MENU. Rotate the dial while pressing the MENU button [24] or the DATA button [25] to set characters or numbers on the display.
See "Dial Menu Operation" for details.

[14] REMOTE/LOCAL selector

Use this selector to control this unit with other equipment connected to the REMOTE 1(9P) connector on the rear panel.
The functions are controlled as follows:

REMOTE	Set to this position when you want this unit to be controlled by the unit connected to the REMOTE 1 (9P) connector (9-pin). With this selector set to REMOTE, none of the operation buttons for tape travel, except for the STOP and EJECT buttons, will function.
LOCAL	Set to this position to operate this unit alone.


SONY
VIDEOCASSETTE RECORDER EVO-9800
video Hi8
COUNTER
RESET
HOURS
MINUTES
SECONDS
FRAMES
POWER
ON
OFF
AUDIO LEVEL
HEADPHONES LEVEL
MICROPHONES
MONITOR
EJECT
SERVO
REC
TIME CODE REC
STOP
REW
PLAY
F.FWD
PAUSE
SHUTTLE
JOG
REVERSE
FORWARD
REMOTE
LOCAL
Operation buttons
15
16
17
18
19
20
21
22
23
Dial menu buttons
24
25
26

Operation Buttons

[15] **EJECT ⏏ button**
Press to eject the video cassette.

[16] **SERVO lamp**
With the PLAY ► button pressed, normally the drum and capstan servo-mechanisms will start working properly. This lamp lights when the servo-mechanisms are locked in a reference signal.

Note

The SERVO lamp blinks if the servo-mechanisms are not locked in during editing.

[17] **REC ● (record) button and indicator**
For recording, press this button simultaneously with the PLAY ► button.

[18] **TIME CODE REC button**
For recording the 8 mm time code, press this button simultaneously with the PLAY ► button.

Note

While the 8 mm time code is recorded, lower part of the picture on the monitor is blanked by a black bar.

[19] **STOP ■ button**
Press to stop the operation of the unit. The E-to-E mode picture can be seen on the monitor screen.

[20] **REW ◄◄ (rewind) button and lamp**
Press to rewind the tape. The E-to-E mode picture can be seen on the monitor screen.

[21] **PLAY ► button and lamp**
Press to play the tape back. Simultaneously pressing this button with the REC ● button sets the unit in the record mode: simultaneously pressing it with the TIME CODE REC button sets the unit in the 8 mm time code recorded mode.

[22] **F FWD ►► (fast forward) button and lamp**
Press to advance the tape rapidly. The E-to-E mode picture can be seen on the monitor screen.

Note

When the tape runs by pressing the F FWD or REW button with the COUNTER/TC/DIAL MENU selector set to COUNTER, the counter indication and actual tape position may not correctly match.

E-to-E (Electric-to-Electric) mode
An input video signal which has passed through the amplifier in the recorder, is displayed on the monitor screen. This is the E-to-E mode picture, permitting the input signal to be checked on the monitor screen.
The unit automatically enters the E-to-E mode when it is set in the stop, F FWD or REW mode.

[23] **PAUSE ❚❚ button and lamp**
Press to stop the tape momentarily. To start the tape, press again. When this button is pressed during playback, a still picture will be obtained. If the PLAY ►, F FWD ►►, REW ◄◄ or search button is pressed during the pause mode, the pause mode will be released and the tape will run in the mode designated by the button pressed.

Dial Menu Buttons

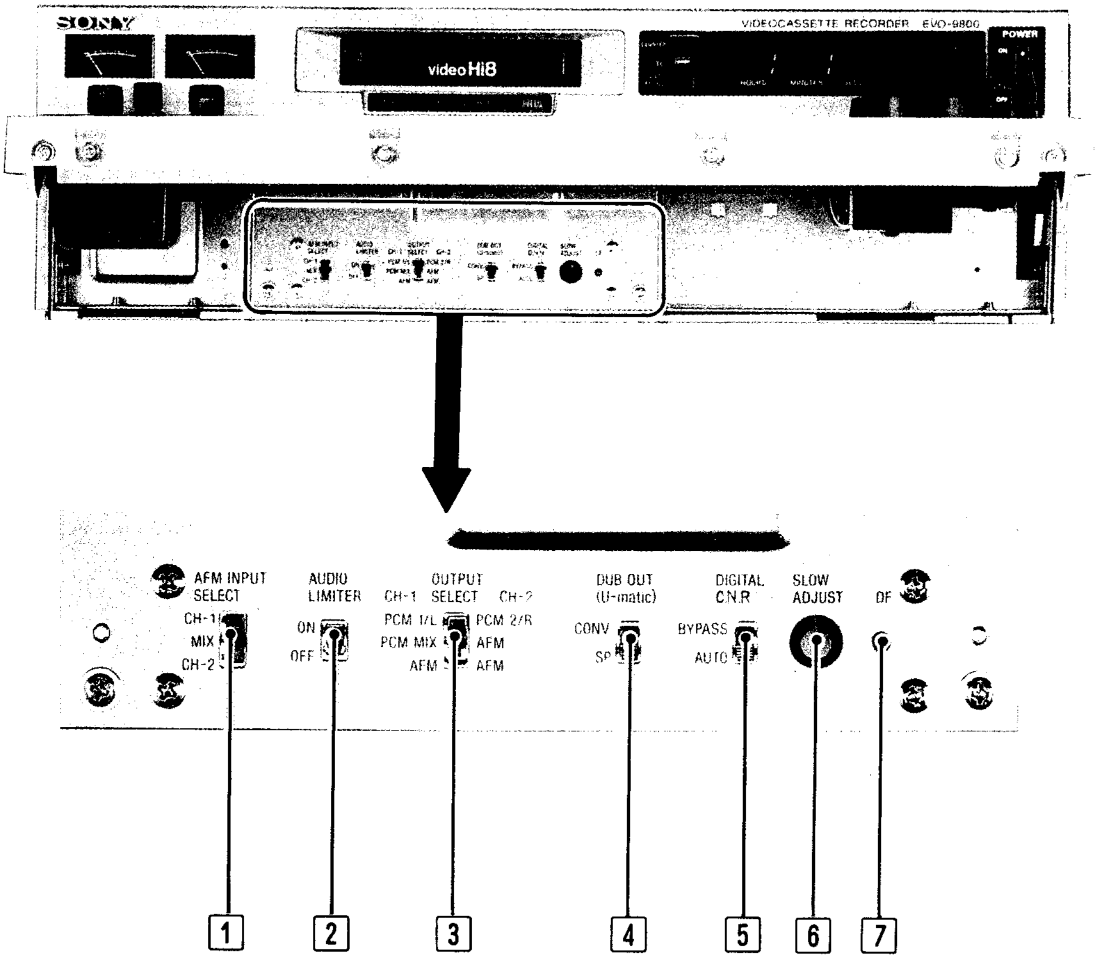
The dial menu buttons [24], [25] and [26] are used only when the COUNTER/TC/DIAL MENU selector [5] is set to DIAL MENU.

[24] **MENU button**
While pressing this button, turn the search dial [13] in jog mode to select the menu.

[25] **DATA button**
While pressing this button, turn the search dial [13] in jog mode to set the data.

[26] **SET button**
Press this button to settle the data set by the DATA [25] button.

(SUB-PANEL)

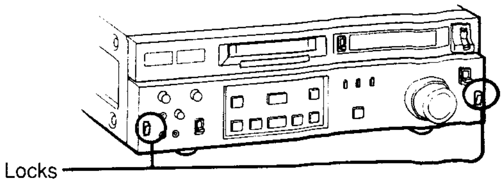

SONY
VIDEOCASSETTE RECORDER EVO-9800
video Hi8
POWER
AFM INPUT SELECT
CH-1
MIX
CH-2
AUDIO LIMITER
ON
OFF
OUTPUT
CH-1 SELECT CH-2
PCM 1/L
PCM 2/R
PCM MIX
AFM
AFM
AFM
DUB OUT (U-matic)
CONV
SP
DIGITAL C.N.R
BYPASS
AUTO
SLOW ADJUST
DF
1
2
3
4
5
6
7

Opening and positioning the control panel

To change the setting of the switches on the sub-panel inside the control panel, open the control panel as illustrated. The control panel can be tilted upwards by 30°, 60° or 90° for convenience.

1 Push down the locks on the both sides simultaneously so that the lower half of the front panel comes to the front.

2 Tilt the panel up and lock it at the desired angle of 30°, 60° or 90°. Be sure to check that both sides are locked firmly.



1 AFM INPUT SELECT switch

Selects the sound for AFM recording.

CH-1	To record the sound connected to the AUDIO LINE IN CH-1/L connector.
MIX	To record the mixed sound connected to the AUDIO LINE IN CH-1/L and CH-2/R connectors.
CH-2	To record the sound connected to the AUDIO LINE IN CH-2/R connector.

2 AUDIO LIMITER switch

ON	The audio recording limiter circuit is activated to minimize sudden surges of input signals and perform recording with low sound distortion. For microphone recording, use this setting.
OFF	The limiter circuit is deactivated, enabling a manual recording level adjustment.

3 OUTPUT SELECT switch

Selects the sound output from the AUDIO LINE OUT CH-1/L and CH-2/R connectors.

Setting		**Output**	
CH-1	**CH-2**	**CH-1/L connector**	**CH-2/R connector**
PCM 1/L	**PCM 2/R**	The sound recorded on the PCM channel 1	The sound recorded on the PCM channel 2
PCM MIX	**AFM**	The mixed sound recorded on the PCM channels 1 and 2	The sound recorded in AFM
AFM	**AFM**	The sound recorded in AFM	

4 DUB OUT (U-matic) selector

Sets according to the recording type of the U-matic recorder connected to the DUB OUT (U-matic) connector.

CONV.	When a conventional(not the SP system) U- matic VTR is connected, or a conventional U-matic tape is inserted into the SP system U-matic VTR.
SP	When an SP system U-matic VTR is connected and an SP tape is inserted.

5 DIGITAL C.N.R. (Chroma Noise Reducer) switch

BYPASS	The video signal bypasses the built-in digital noise reducer.
AUTO	During playback, the video signal automatically passes the chroma noise reducer. Normally use this setting.

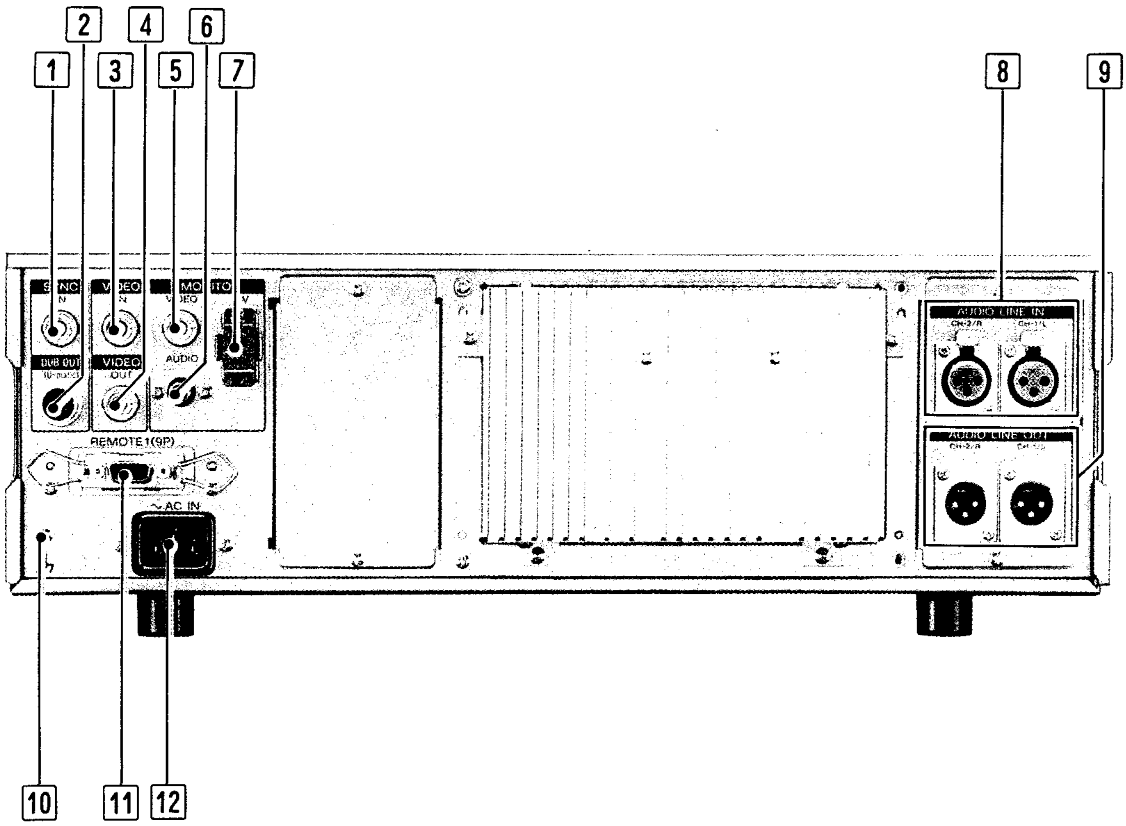
6 SLOW ADJUST (slow-motion picture adjustment) control

Normally keep this control at the center click position. If streaks or snow appear during slow-motion playback, turn this control so that the best possible picture is obtained.

7 DF (drop frame) lamp

Lights when the 8mm time code is set in drop frame mode.

(REAR PANEL)



1 **SYNC IN (sync signal input) connector (BNC type)**
Accepts an external reference video signal to operate the unit in synchronization with an external device.

2 **DUB OUT U-matic (dubbing output for U-matic VTR) connector (7-pin)**
Use to supply the video signal to be dubbed to a U-matic VTR. Connect to the dub input connector of the U-matic VTR using the 7-pin dubbing cable (optional).

3 **VIDEO IN (video input) connector (BNC type)**
Supply a composite video signal to this connector.

4 **VIDEO OUT connector (BNC type)**
Supplies a composite video signal.

5 **MONITOR VIDEO connector (BNC type)**
This outputs the video signal for monitoring. Connect to the video input connector of a color monitor. Information superimposed on a picture in the dial menu operation mode will also be output.

6 **MONITOR AUDIO connector (phono jack)**
Supplies an audio signal selected by the MONITOR OUT switch on the front panel.

7 **MONITOR TV connector (8-pin connector)**
Accepts a video monitor having an 8-pin VTR connector. Both the MONITOR VIDEO, and MONITOR AUDIO connections can be replaced with a single cable connection here. In playback, the channel selected by the MONITOR OUT switch will be heard through the speaker on the video monitor.
- The data of the dial menu is superimposed on the video signal and output.

8 **AUDIO LINE IN CH-1/L and CH-2/R connectors (XLR 3-pin, female)**

9 **AUDIO LINE OUT CH-1/L and CH-2/R connectors (XLR 3-pin, male)**

10 **Ground terminal**

11 **REMOTE 1 (9P) connector (9-pin)**
Connect a Sony editing control unit such as an RM-450 to perform editing.
Use the 9-pin remote control cable (optional) to make the connection.

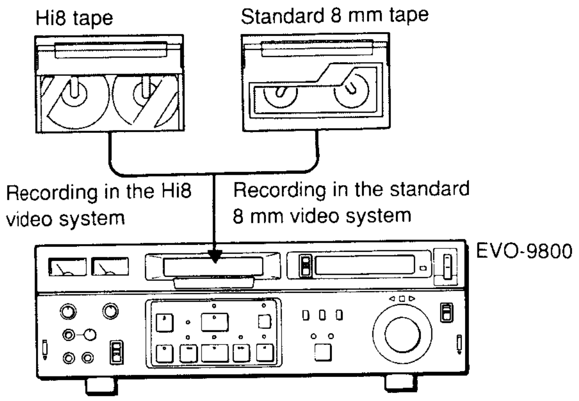
12 **AC IN (power inlet)**
Plug in the supplied AC power cord to supply power to the EVO-9800.

1-3. NOTES ON VIDEO CASSETTE

Cassette Tape Being Used and Automatic Switching

• recording mode

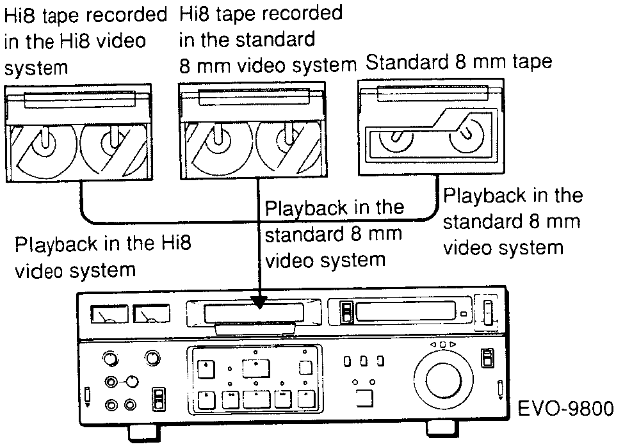
When using a Hi8 cassette tape for recording, the VTR senses the detection holes on the cassette shell (see below), and automatically performs the recording in the SP (stantard play) mode of Hi8 video system.
When using a standard 8 mm tape, the recording is performed in the standard 8 mm video system.


Hi8 tape
Standard 8 mm tape
Recording in the Hi8 video system
Recording in the standard 8 mm video system
EVO-9800

• playback mode

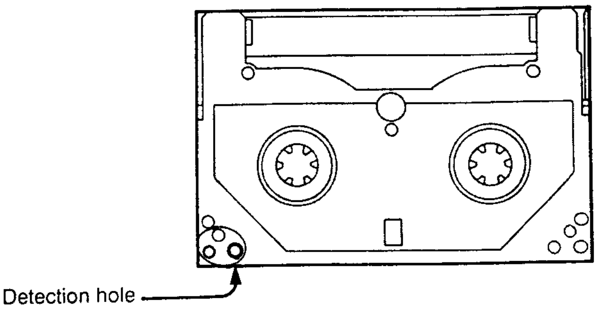
In playback, the VTR can detect the system mode used in recording by verifying the recorded signal, and plays back the tape in the appropriate mode.

- The Hi8 indicator on the front panel lights when a tape recorded in the Hi8 video system is played back.

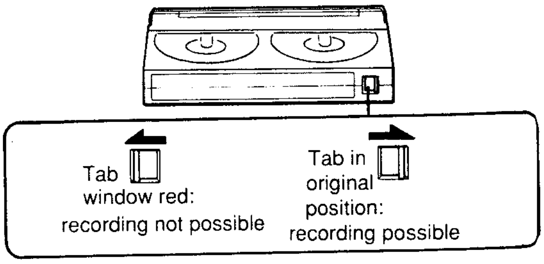

Hi8 tape recorded in the Hi8 video system
Hi8 tape recorded in the standard 8 mm video system
Standard 8 mm tape
Playback in the Hi8 video system
Playback in the standard 8 mm video system
Playback in the standard 8 mm video system
EVO-9800

Hi8 Cassette Tape

This new Hi8 tape with high durability was specially developed for Hi8 video system recording/playback and features characteristics best suiting the Hi8 video system. Hi8 cassettes have a detection hole on the bottom of the cassette shell to automatically set Hi8 VTRs in the Hi8 video system recording.

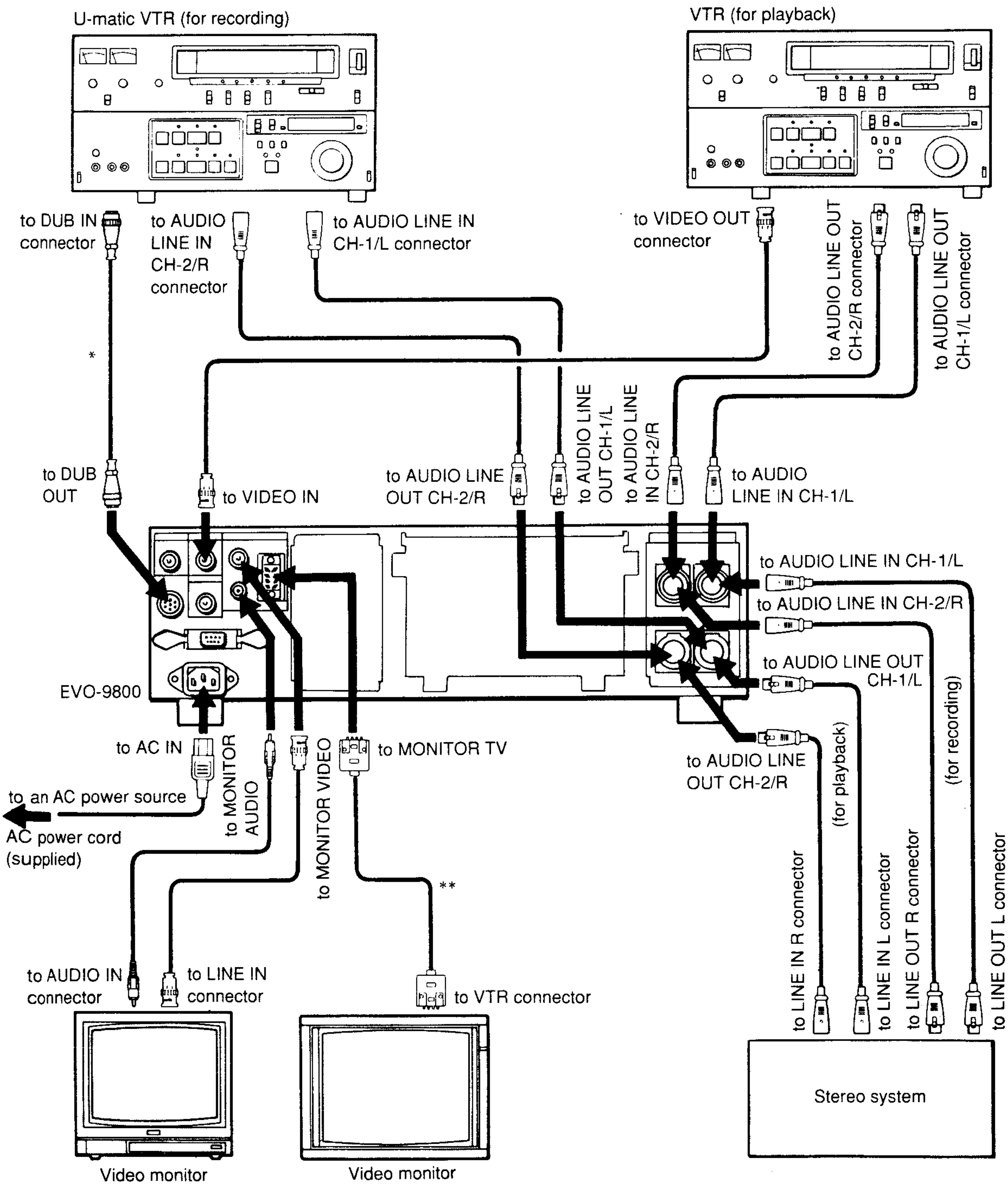

Detection hole

Record prevent Tab


Tab window red: recording not possible
Tab in original position: recording possible

1-4. CONNECTIONS

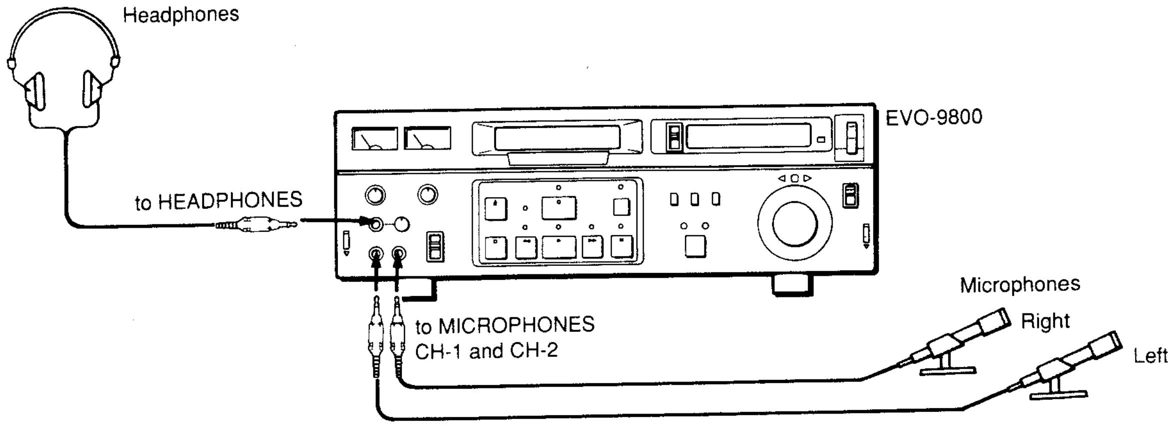
1-4-1. Basic Connections


U-matic VTR (for recording)
VTR (for playback)
to DUB IN connector
to AUDIO LINE IN CH-2/R connector
to AUDIO LINE IN CH-1/L connector
to VIDEO OUT connector
to AUDIO LINE OUT CH-2/R connector
to AUDIO LINE OUT CH-1/L connector
*
to DUB OUT
to VIDEO IN
to AUDIO LINE OUT CH-2/R
to AUDIO LINE OUT CH-1/L
to AUDIO LINE IN CH-2/R
to AUDIO LINE IN CH-1/L
to AUDIO LINE IN CH-1/L
to AUDIO LINE IN CH-2/R
to AUDIO LINE OUT CH-1/L
to AUDIO LINE OUT CH-2/R
EVO-9800
to AC IN
to an AC power source
AC power cord (supplied)
to MONITOR AUDIO
to MONITOR VIDEO
to MONITOR TV
**
(for playback)
(for recording)
to AUDIO IN connector
to LINE IN connector
to VTR connector
to LINE IN R connector
to LINE IN L connector
to LINE OUT R connector
to LINE OUT L connector
Video monitor
Video monitor
Stereo system

* Dubbing cable VDC-5. When the VTR is not equipped with the DUB connector, use the VIDEO OUT connector on the EVO-9800 for connecting a video output signal using a cable with BNC connectors.

** Use a VMC-3P, VMC-5P or VMC 10P monitor connecting cable.

1-4-2. Connections of Headphones and Microphones

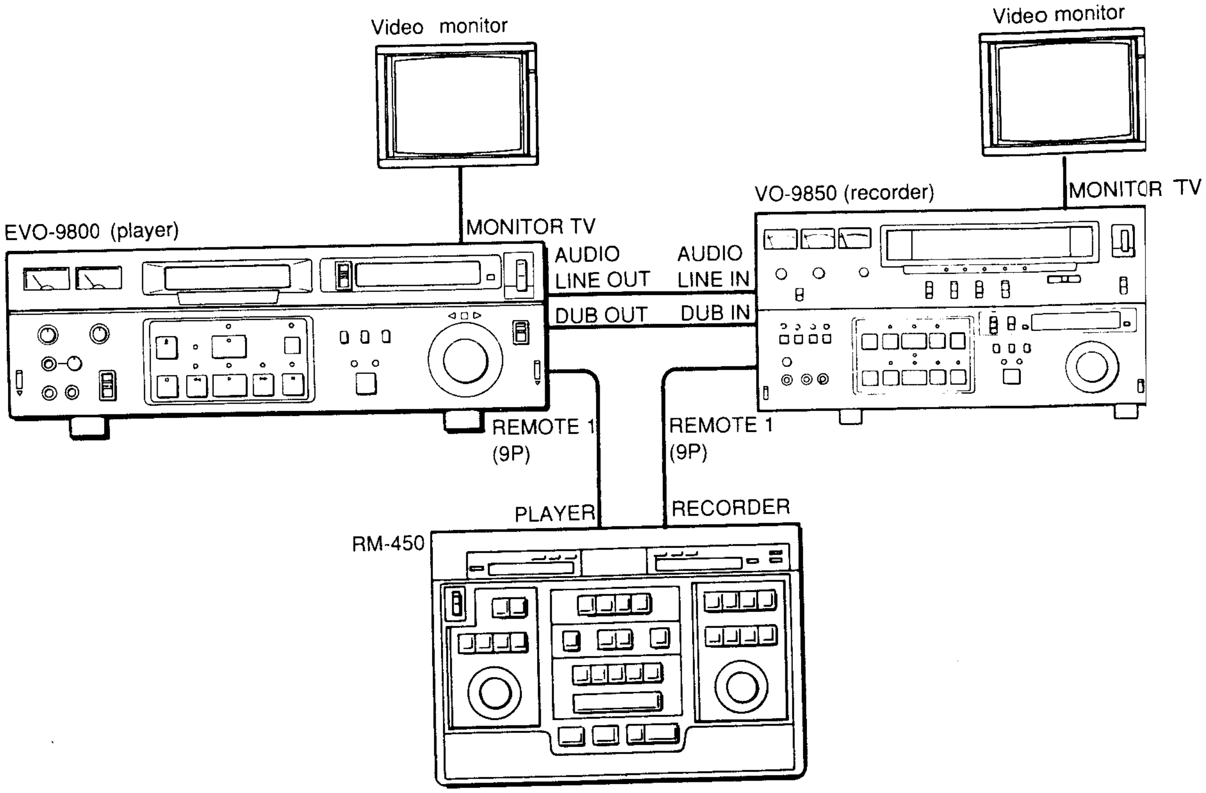

Headphones
to HEADPHONES
EVO-9800
to MICROPHONES
CH-1 and CH-2
Microphones
Right
Left

Note

When the microphones are connected, the signals connected to the AUDIO LINE IN connectors on the rear panel are automatically cut off, and signals from the microphones will be recorded.

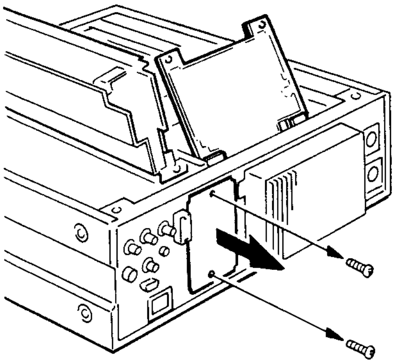
1-5. EDITING

The EVO-9800 can be used as a player of an automatic editing system composed of the editing control unit, U-matic VTR for recording, video monitors, etc. Then the program recorded by a video camcoder can be edited.
An example of an editing system is introduced here. For details on connections and operations, refer to the instruction manual supplied to the editing control unit or VTR.

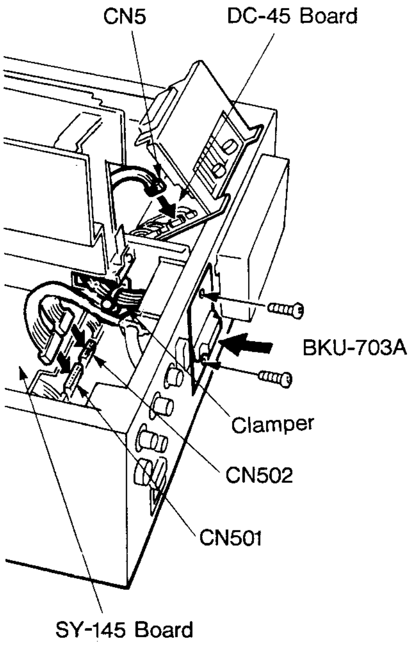

Video monitor
Video monitor
VO-9850 (recorder)
MONITOR TV
EVO-9800 (player)
MONITOR TV
AUDIO
LINE OUT
AUDIO
LINE IN
DUB OUT
DUB IN
REMOTE 1
(9P)
REMOTE 1
(9P)
PLAYER
RECORDER
RM-450

1-6. INSTALLATION OF BKU-703A (33P) EDITING INTERFACE

Remove the Blank Panel as shown in the figure.



Install the BKU-703A as shown in the figure.


CN5
DC-45 Board
BKU-703A
Clamper
CN502
CN501
SY-145 Board

About details, please refer to operation manual of BKU-703A.

1-7. RACK MOUNTING

The RMM-980 (option) is prepared for mounting the EVO-9800 in a rack.

SECTION 2
SERVICE INFORMATION

2-1. REMOVAL AND INSTALLATION OF CABINET

Front Panel

1. Remove the Top Panel and the Side Panels.
2. Remove four fixing screws and remove the Front Panel releaseing the each claw. (Fig.1)
3. If installing the Front Panel, press it in the direction of the arrow and put the two grooves of the Front Panel into the shafts as shown in the figure.

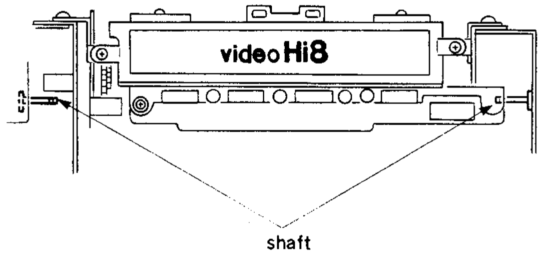


Fig. 2

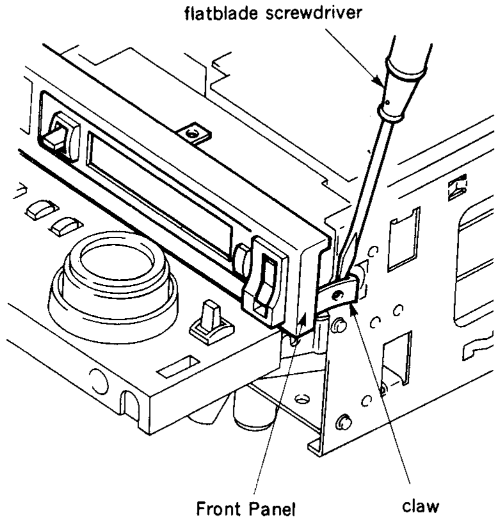


Fig. 1

Key Panel

1. Open Key Panel 90 degrees pushing down two levers.
2. Remove Dial Knob from the Key Panel as follows. (Fig.3)
   (1) Remove the Dial Knob Rubber and the Knob Plate from the Dial Knob.
   (2) Remove a fixing screw and remove the Dial Knob from the Key Panel.
3. Remove three Control Knobs from the Key Panel.
4. Reverse the Key Panel at a 30 degrees after removing four fixing screws and remove it.
5. If installing the Key Panel, press it in the direction of the arrow and put the two grooves of the Front Panel into two shafts.

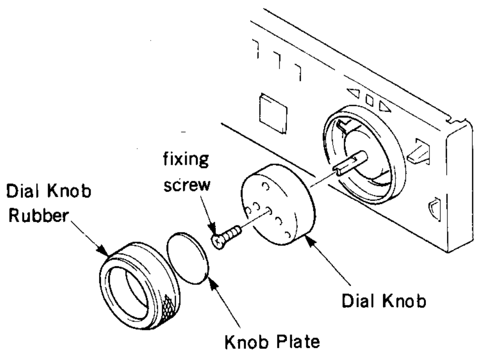
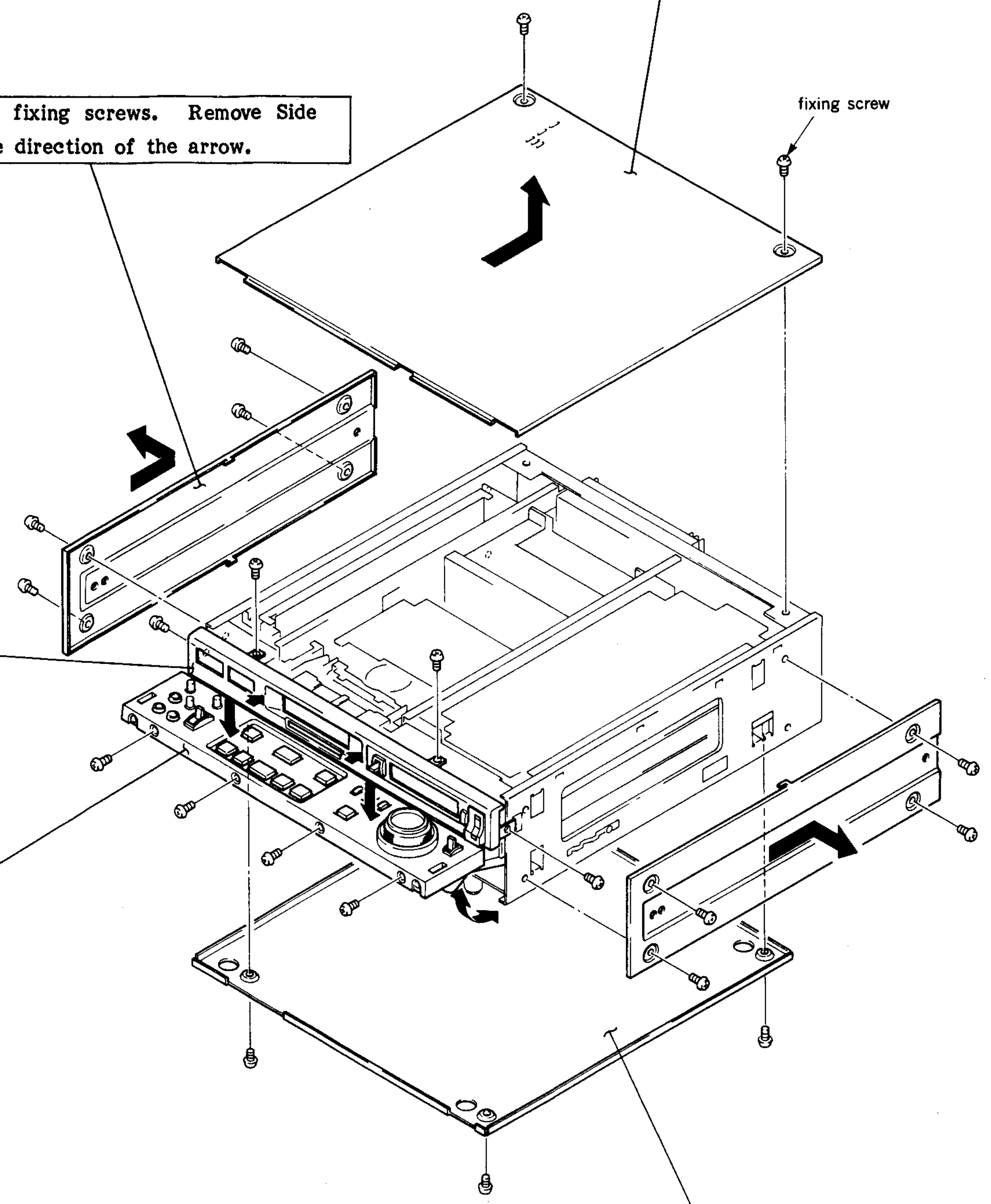


Fig. 3



Top Panel

Remove two fixing screws. Remove Top Panel in the direction of the arrow.

Side Panel

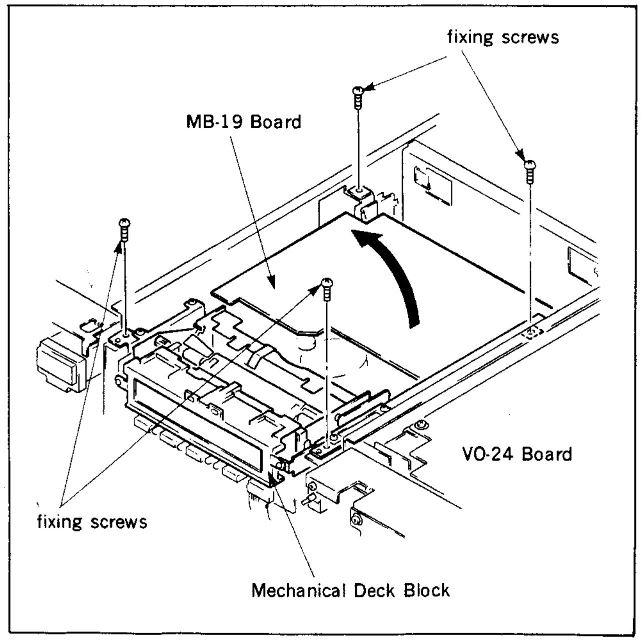
Remove four fixing screws. Remove Side Panel in the direction of the arrow.

Bottom Plate

Remove four fixing screws and remove Bottom Plate.

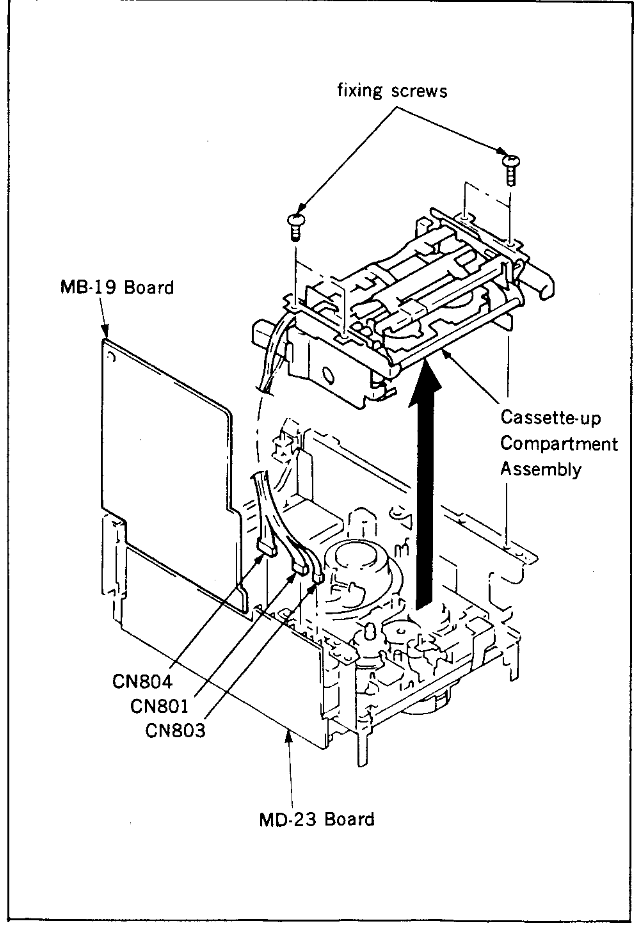
2-2. REMOVAL OF MECHANICAL DECK BLOCK

1. Disconnect connectors CN902, 903, 904 on the SE-10 Board from the bottom.
2. Remove two fixing screws from the top. Release the claw of PC holder and open the MB-19 Board.
3. Disconnect connectors CN911, 912, 913 on the HK-4 Board. Disconnect connectors CN905, 907 on the SE-10 Board.
4. Disconnect connectors CN923, 924 on the MB-19 Board.
5. Open the VO-24 Board. Disconnect CN555 (Condensation Sensor) on the DI-11 Board.
6. Remove four fixing screws as shown in the figure and remove Mechanical Deck Block.


fixing screws
MB-19 Board
VO-24 Board
fixing screws
Mechanical Deck Block

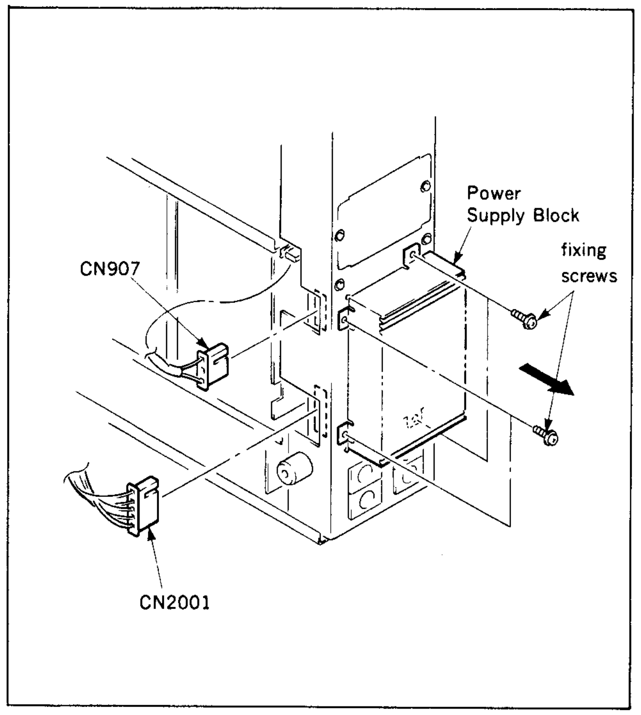
2-3. REMOVAL OF THE CASSETTE-UP COMPARTMENT ASSEMBLY

1. Remove two fixing screws. Release the claw of the PC holder and open the MB-19 Board.
2. Disconnect connectors CN801, 803, 804 on the MD-23 Board.
3. Remove four fixing screws and remove Cassette-up Compartment Assembly in the direction of the arrow.


fixing screws
MB-19 Board
Cassette-up
Compartment
Assembly
CN804
CN801
CN803
MD-23 Board

2-4. REMOVAL OF THE POWER SUPPLY BLOCK

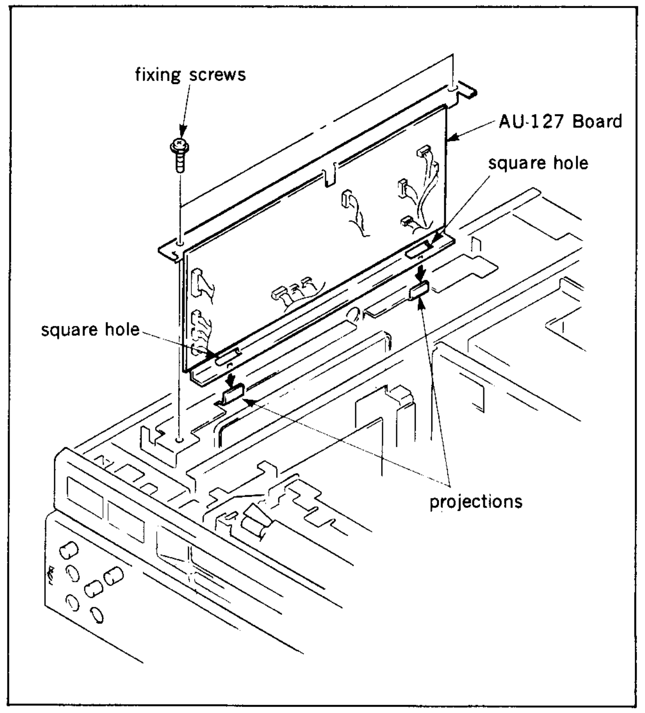
1. Remove the Bottom Plate.
2. Disconnect connector CN907 of the Power Switch.
3. Disconnect connector CN2001 on the DC-45 Board.
4. Remove four fixing screws and remove the Power Supply Block.


Power
Supply Block
fixing
screws
CN907
CN2001

2-5. SERVICE OF PRINTED CIRCUIT BOARDS

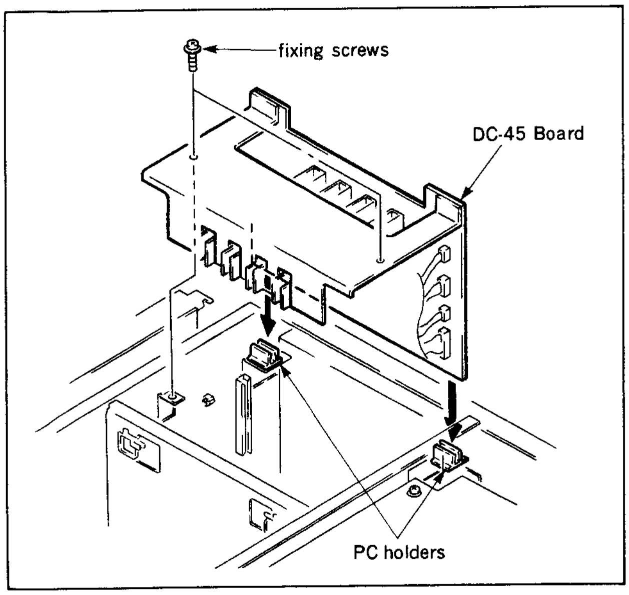
2-5-1. Service of the AU-127 Board

1. Remove two fixing screws and pull out the AU-127 Board.
2. Put the two square holes of the AU-127 Board into the two projections of chassis. The AU-127 Board will stand.


fixing screws
AU-127 Board
square hole
square hole
projections

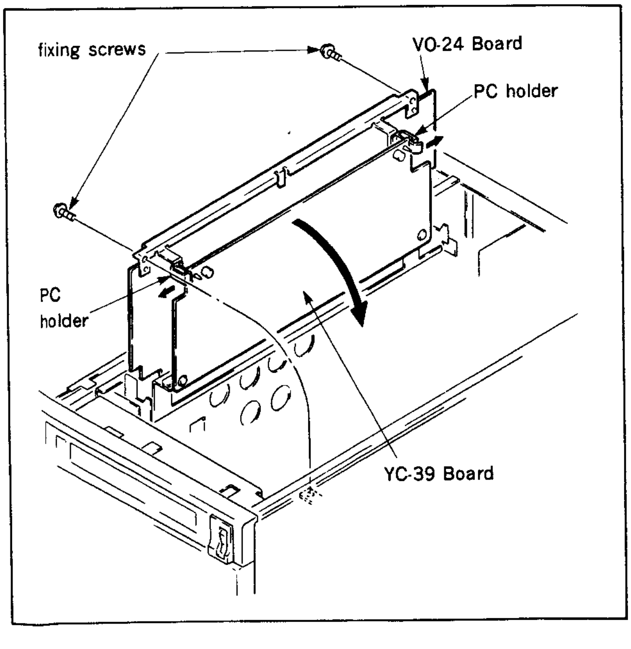
2-5-2. Service of the DC-45 Board

1. Remove two fixing screws and pull out the DC-45 Board.
2. Put the DC-45 Board into two PC holders. The DC-45 Board will stand.


fixing screws
DC-45 Board
PC holders

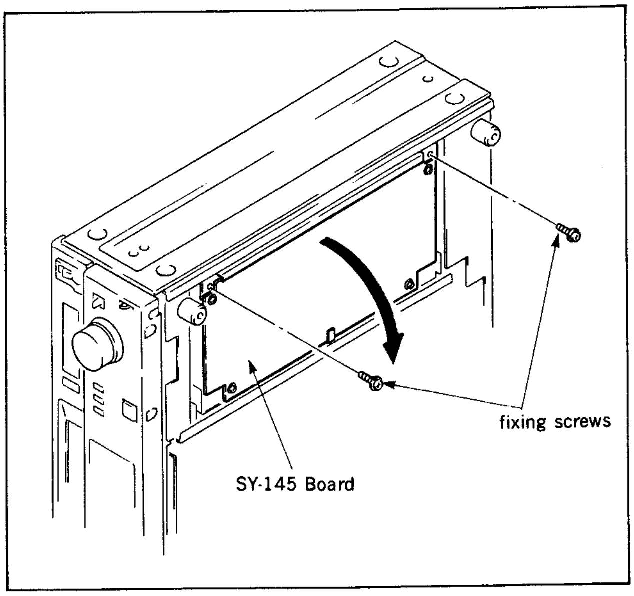
2-5-3. Opening the VO-24 and YC-39 Boards

1. Remove two fixing screws and open the VO-24 Board.
2. Release the two claws of the PC holder and open the YC-39 Board.


fixing screws
VO-24 Board
PC holder
PC holder
YC-39 Board

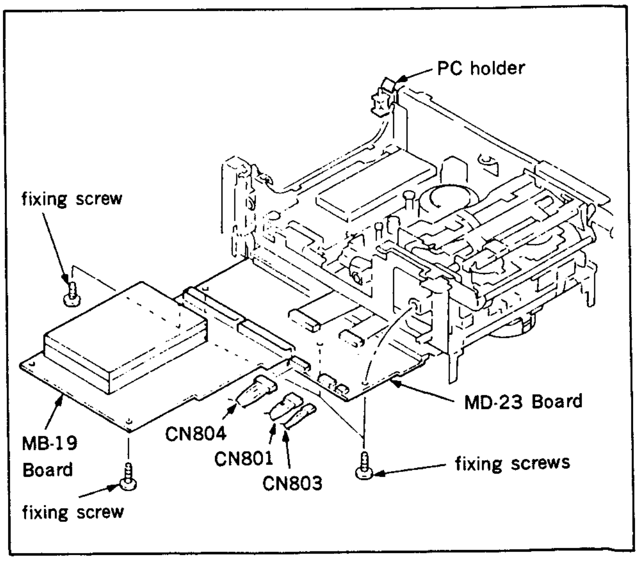
2-5-4. Opening the SY-145 Board

1. Place the unit on the left side down. Remove the Bottom Plate.
2. Remove two fixing screws and open the SY-145 Board.


fixing screws
SY-145 Board

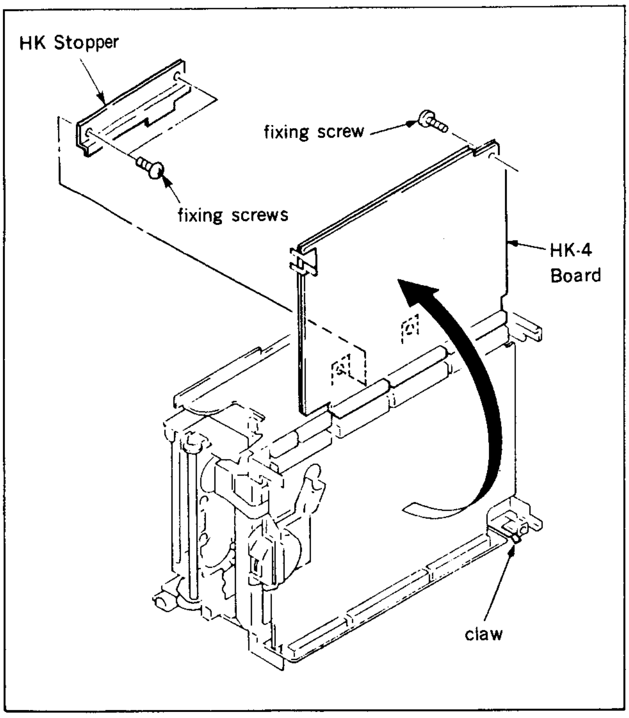
2-5-5. Opening the MB-19 and MD-23 Boards

1. Remove two fixing screws. Release the claw of the PC holder and open the MB-19 Board.
2. Disconnect connectors CN801, 803, 804 on the MD-23 Board.
3. Remove three fixing screws and open the MD-23 Board.


PC holder
fixing screw
MD-23 Board
MB-19 Board
CN804
CN801
CN803
fixing screws
fixing screw

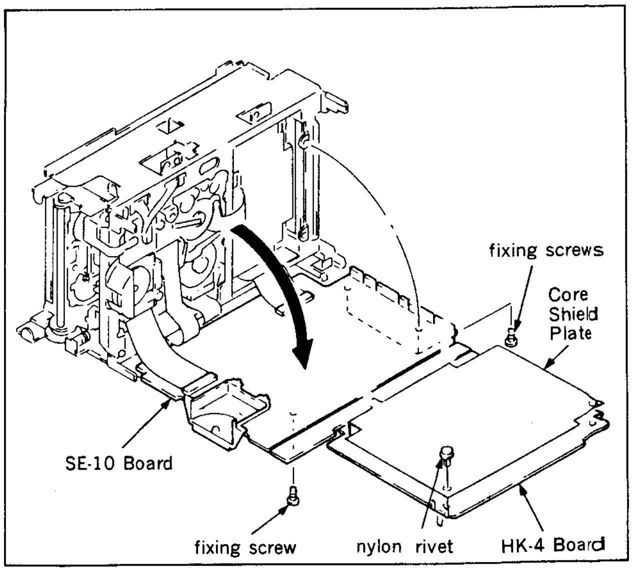
2-5-6. Opening the HK-4 Board

1. Remove two fixing screws and remove HK Stopper.
2. Remove the fixing screw of the HK-4 Board.
3. Release a claw and open the HK-4 Board in the direction of the arrow.


HK Stopper
fixing screw
fixing screws
HK-4 Board
claw

2-5-7. Opening the SE-10 Board

1. Open the HK-4 Board referring to Section 2-5-6.
2. Remove a nylon rivet and remove Core Shield Plate.
3. Remove the three fixing screws of the SE-10 Board.
4. Open the SE-10 Board in the direction of the arrow.


fixing screws
Core Shield Plate
SE-10 Board
fixing screw
nylon rivet
HK-4 Board

2-5-8. Removal of the RS-31 Board

1. Disconnect the FP-122 Flexible Board.
2. Disconnect the FP-206 Flexible Board.
3. Remove the two fixing screws of the Reel Motor Assembly.
4. Put a flatblade screwdriver into shown at the A. Release projection B.
5. Remove Reel Motor Assembly in the direction of the arrow. (Fig. 1)
6. Disconnect connector CN302 on the RS-31 Board.
7. Disconnect a red connector on the MS-4 Board. Disconnect a white connector on the LS-9 Board.
8. Disconnect Flat Cable from connector CN012 on the SE-10 Board. (Fig. 2)
9. Disconnect connector CN301 on the RS-31 Board.
10. Remove a fixing screw.

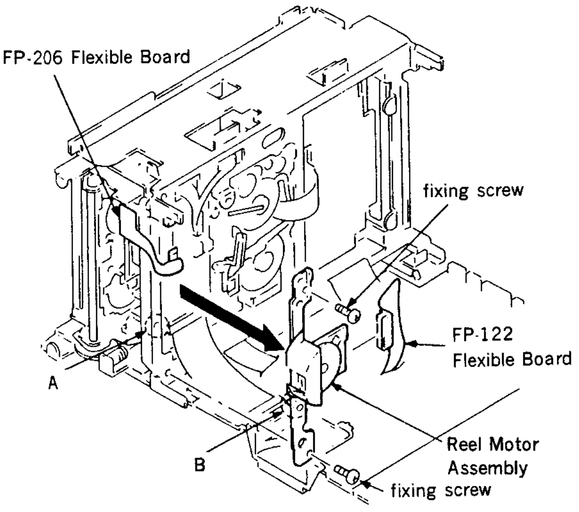

FP-206 Flexible Board
fixing screw
FP-122
Flexible Board
A
B
Reel Motor
Assembly
fixing screw

Fig. 1

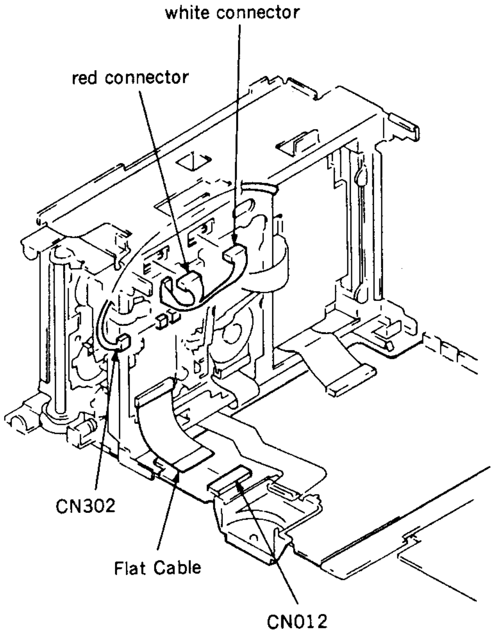

white connector
red connector
CN302
Flat Cable
CN012

Fig. 2

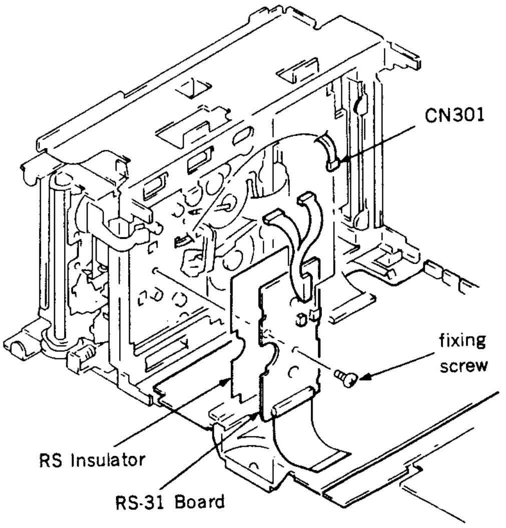
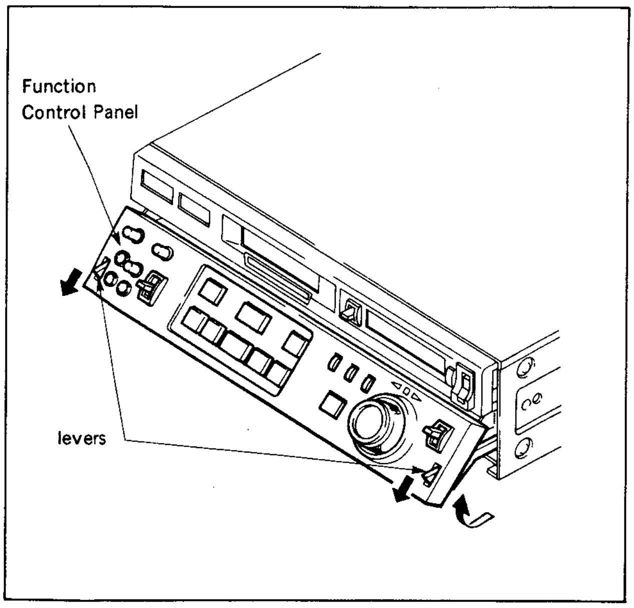

CN301
fixing
screw
RS Insulator
RS-31 Board

Fig. 3

2-6. POSITIONAL ADJUSTMENT OF FUNCTION CONTROL PANEL

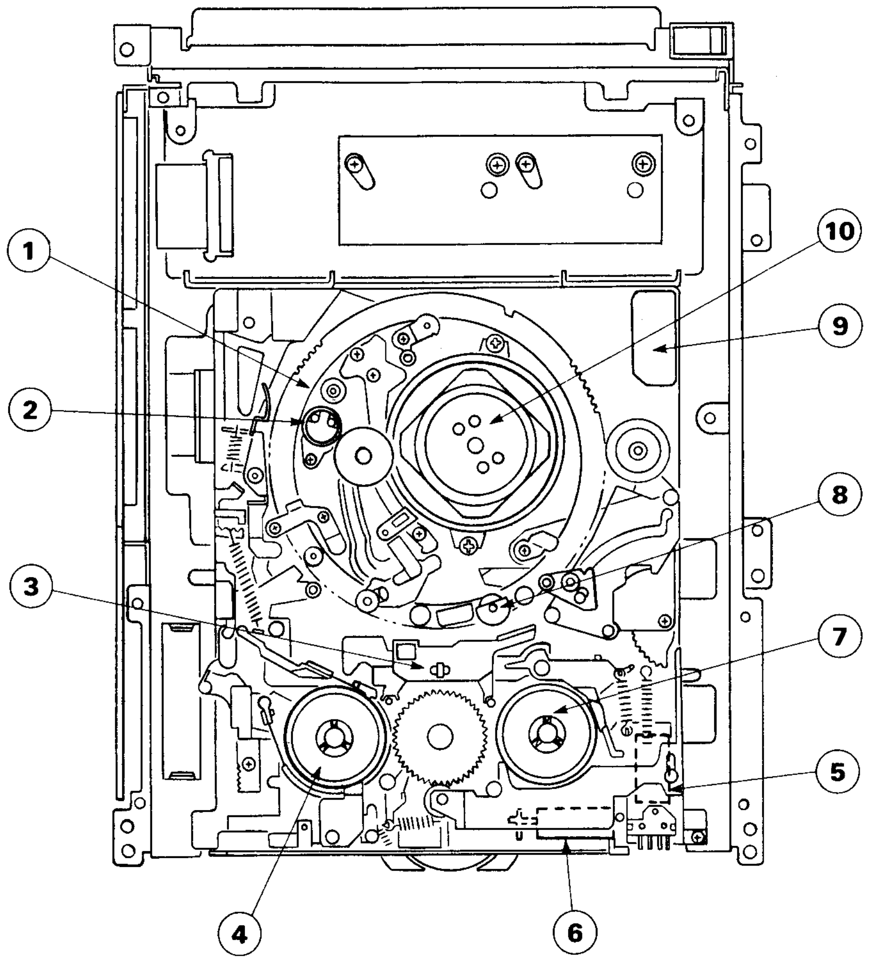
Open Function Control Panel pushing down levers. It is possible to open the Fundtion Control Panel at 30, 60 and 90 degrees. It is possible to operate switches on the sub-panel by means of opening it.


Function Control Panel
levers

2-7. LOCATION OF MAIN PARTS

2-7-1. Location of the Main Mechanical Parts/Components

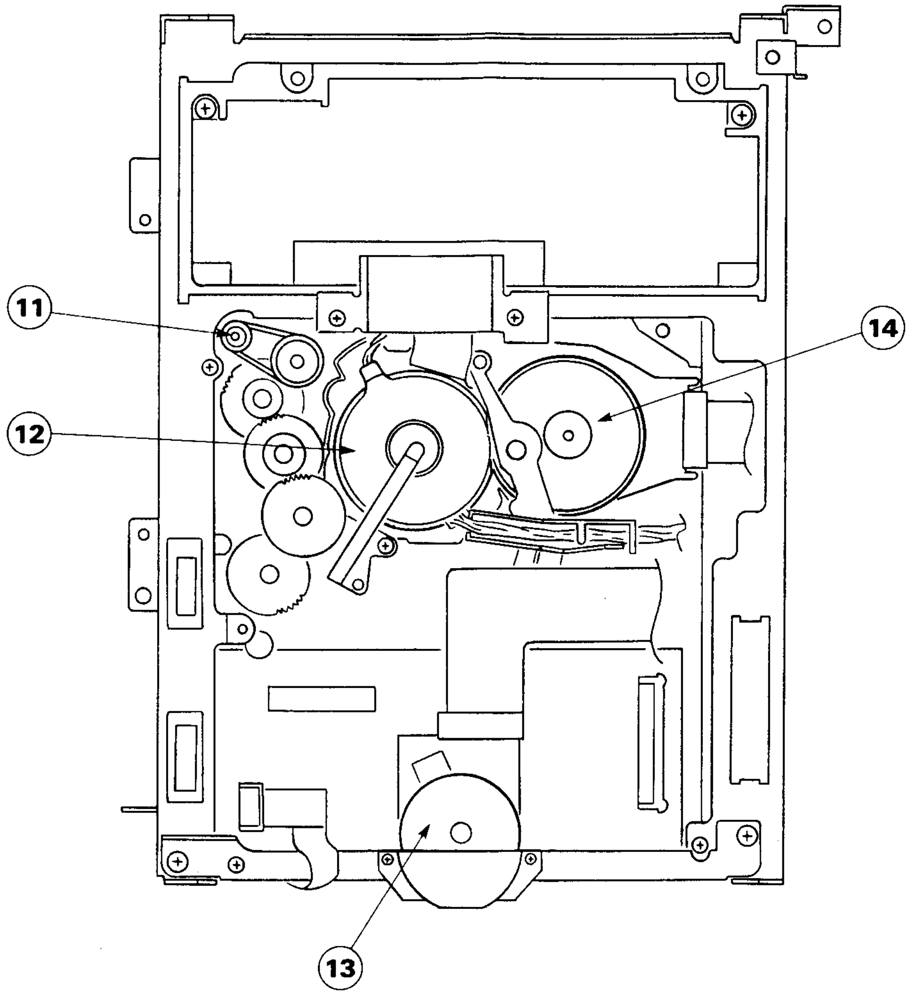
TOP VIEW



①Threading Ring
②Capstan Shaft
③Tape Top/End LED
④Supply Reel Table
⑤Control Motor

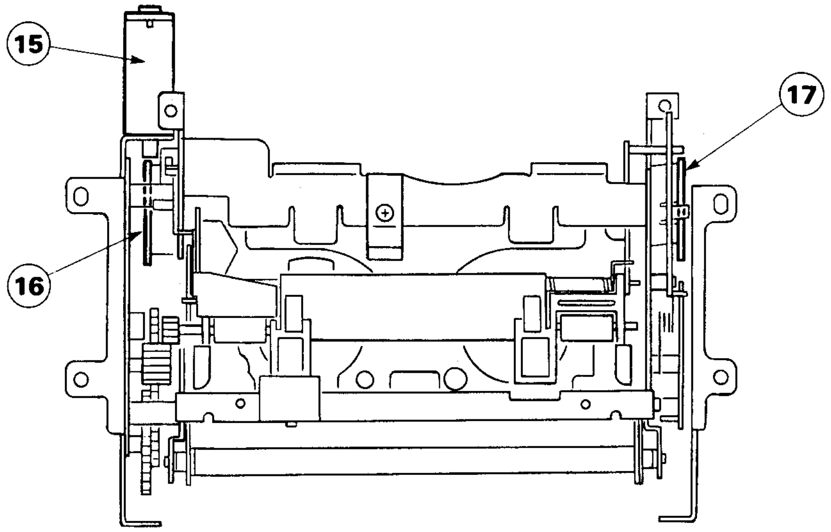
⑥Brake Plunger Solenoid
⑦Take-up Reel Table
⑧Pinch Roller Arm Assembly
⑨Threading Motor
⑩ Drum

BOTTOM VIEW



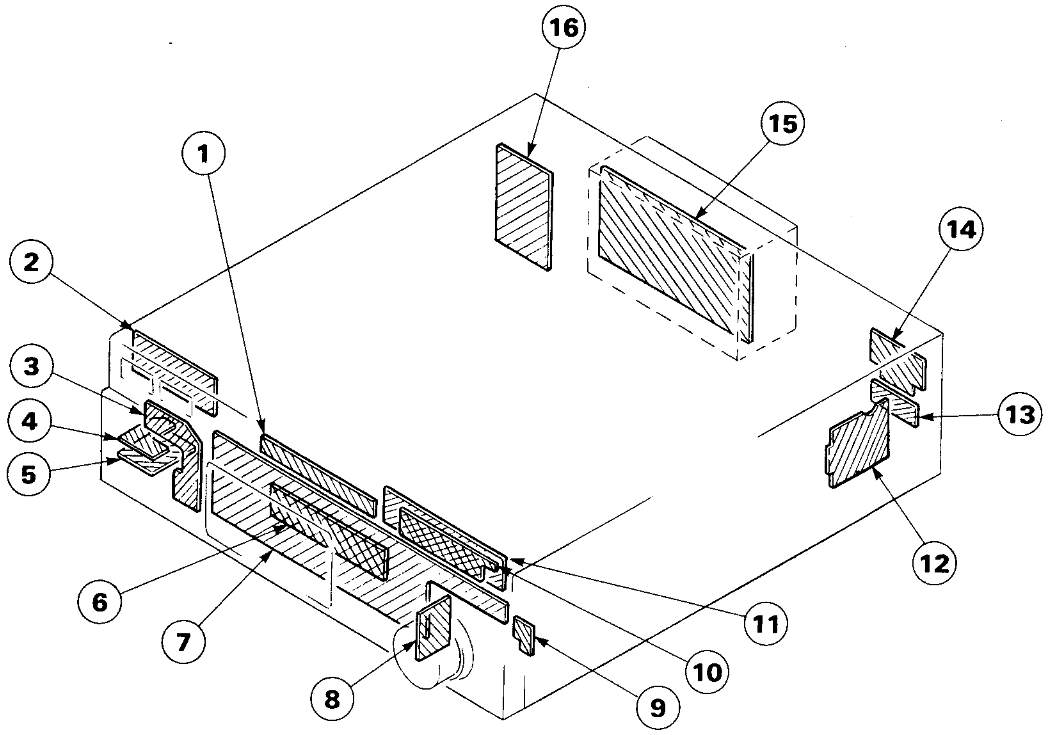
⑪ Threading Motor
⑫ Drum
⑬ Reel Motor
⑭ Capstan Motor

CASSETTE-UP COMPARTMENT
TOP VIEW



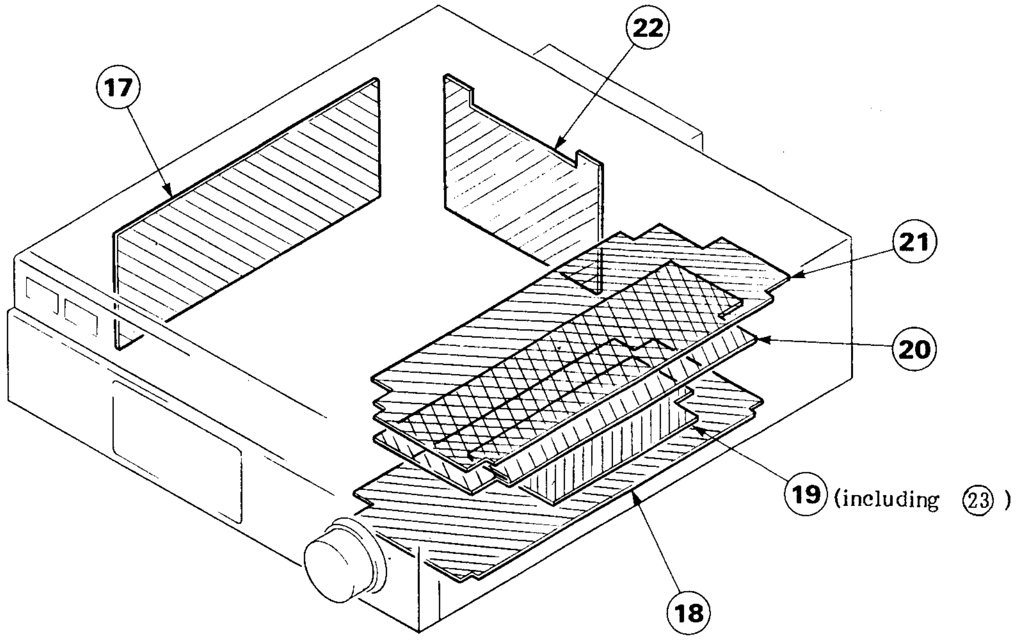
⑮ Cassette Loading Motor
⑯ Tape End Sensor
⑰ Tape Top Sensor

2-7-2. Location of the Printed Circuit Boards


16
15
1
14
2
3
13
4
5
12
6
11
7
10
8
9

①LP-52 Board
②MT-57 Board
③SW-346 Board
④HP-42 Board
⑤MC-28 Board
⑥SW-347 Board
⑦KY-162 Board
⑧PTC-32 Board

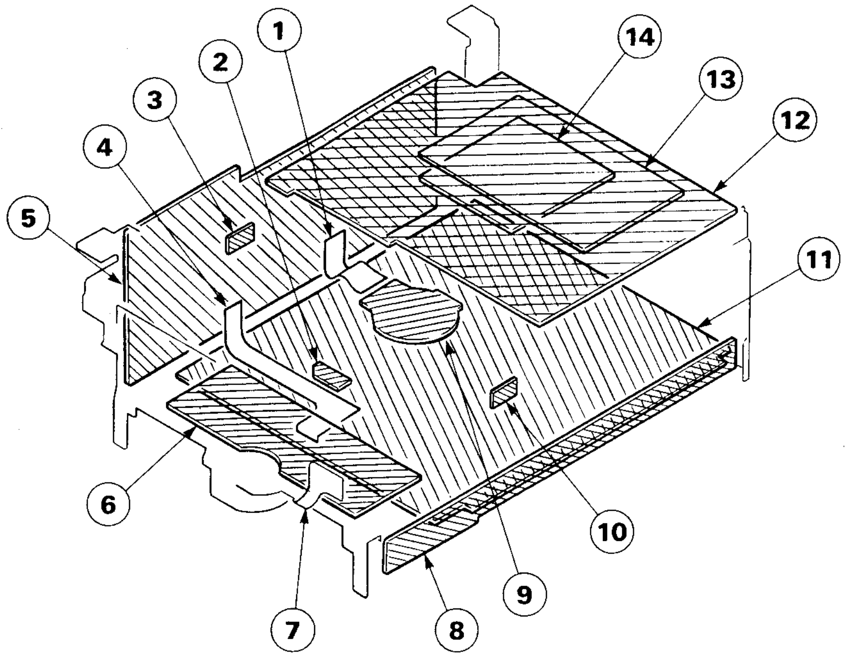
⑨SW-348 Board
⑩ DP-101 Board
⑪ DD-12 Board
⑫ AC-65 Board
⑬ RM-66 Board
⑭ CP-141 Board
⑮ Switching Regulator (UR-14)
⑯ AA-16 Board


22
17
21
20
19 (including ㉓)
18

⑰ AU-127 Board
⑱ SY-145 Board
⑲ DI-11 Board (including ㉓)
⑳ YC-39 Board
㉑ VO-24 Board
㉒ DC-45 Board
㉓ DUS-309 Board

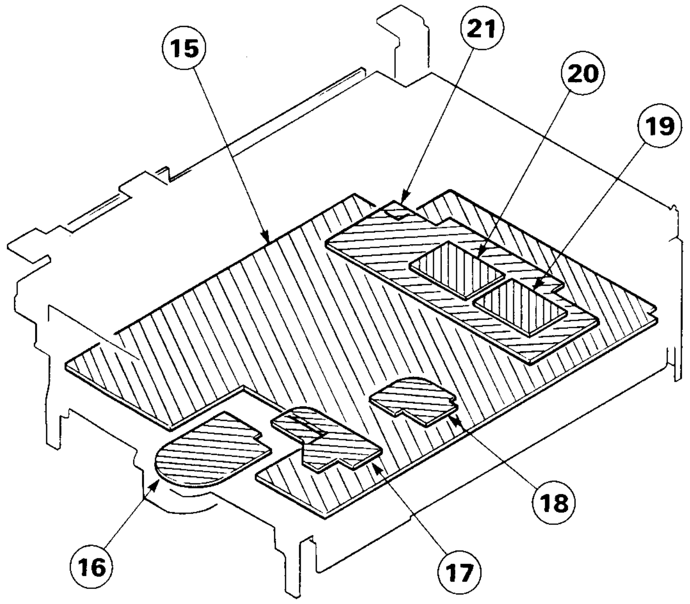
MECHANICAL DECK

㉓)



① FP-84 Flexible Board
② LD-1 Board
③ TS-74 (L) Board
(Cassette-up Compartment)
④ FP-122 Flexible Board
⑤ MD-23 Board
⑥ RS-31 Board
⑦ FP-206 Flexible Board

⑧ IG-4 Board
⑨ Capstan Motor Board
⑩ TS-74 (R) Board
(Cassette-up Compartment)
⑪ HK-4 Board
⑫ MB-19 Board
⑬ PD-19 Board
⑭ PA-27 Board



⑮ SE-10 Board
⑯ Reel Motor Board
⑰ MS-4 Board
⑱ LS-9 Board
⑲ RP-73 (SP) Board
⑳ RP-73 (LP) Board
㉑ FR-40 Board

2-8. PRINTED CIRCUIT BOARDS

The circuit information is provided below.

SYSTEM	BOARD	CIRCUIT FUNCTION
VIDEO	YC-39	YC Separator
	VO-24	Video Interface
AUDIO	AU-127	Audio Input/Output Amp
	AA-16	XLR Input/Output Amp
SYSCON	SY-145	System Control
	KY-162	Function Key Board
	DP-101	Display
	DD-12	Display Drive
	PTC-32	Search Dial
DIGITAL PROCESS	DI-11	Digital CNR
	*DUS-309	Read Timing Control Pulse Generator
Others	LP-52	Mode Display
	CP-141	Connector Panel
	SW-346	Audio Level Control
	SW-347	Audio select SW
	SW-348	Remote Panel SW
	MC-28	Mic. Jack
	HP-42	Head phones Level
	MT-57	Audio Meter Level
	RM-66	9-pin Connector

* DUS-309 Board is used for Serial No. up to 10340.

Mechanical deck

SYSTEM	BOARD	CIRCUIT FUNCTION
VIDEO	FR-40	Head Amp/Flying Erase
	HK-4	Y/C Video process
	RP-73	REC/PB Head Amp
AUDIO	MB-19	PCM Audio
	PA-27	PCM Audio Analog
	PD-19	PCM Audio Digital
SYSCON SERVO	TS-74	Tape Top/End Sensor
	IG-4	Terminal
	LD-1	Tape Sensor
	MS-4	Mode Switch
	LS-9	Loading Switch
	RS-31	Mechanism Control
	MD-23	Capstan/Drum Drive
	SE-10	Servo, Syscon
Others	FP-84	Connection
	FP-206	Connection
	FP-122	Connection

2-9. CONNECTORS

When external cables are connected to the various connectors on the connector panel during maintenance, the hardware listed below (or equivalents) must be used.

PANEL INDICATION	CONNECTOR
VIDEO IN VIDEO OUT SYNC IN MONITOR VIDEO	1-560-069-11 PLUG, BNC, MALE
MONITOR AUDIO	1-506-311-00 PLUG, PIN
DUB OUT	1-508-948-00 PLUG, 7P, MALE
REMOTE(9P)	1-560-651-00 PLUG, 9P, MALE and 1-561-749-00 JUNCTION SHELL, 9P
AUDIO LINE IN	1-508-084-00 CONNECTOR, XLR, 3P, MALE
AUDIO LINE OUT	1-508-083-00 CONNECTOR, XLR 3P, FEMALE
MONITOR TV	1-506-161-00 CONNECTOR, 8P, MALE

2-10. CONNECTOR INPUT/OUTPUT SIGNAL

The connector INPUT/OUTPUT signals of the connector panel are as follows.

INPUT

VIDEO IN : 1.0 ± 0.3 Vp-p, 75 ohms, unbalanced, sync negative

SYNC IN : 1 to 5 Vp-p, 75 ohms, unbalanced, sync negative

MIC IN (front panel) : -60 dBu, more than 3k ohms (600 ohm microphone is usable.), unbalanced

AUDIO LINE IN (CH-1/L, CH-2/R) : +4 dBu, more than 10k ohms (600 ohm possible), balanced

OUTPUT

VIDEO OUT : 1.0 ± 0.2 Vp-p, 75 ohms, unbalanced, sync negative

MONITOR VIDEO OUT / TV-VIDEO OUT (8P) : 1.0 ± 0.2 Vp-p, 75 ohms, unbalanced, sync negative

DUB OUT : Luminance signal
. 1.7 ± 0.3 Vp-p, 50 ohms sync negative
Chroma signal
. 0.9 ± 0.2 Vp-p, 50 ohms

AUDIO LINE OUT (CH-1/L, CH-2/R) : +4 dBu (at 600-ohm load), balanced

MONITOR AUDIO OUT / TV-AUDIO OUT (8P) : -5 dBu (at 47k-ohm load), unbalanced

HEADPHONES OUT (front panel) : -46 to -26 dBu (at 8-ohm load), adjustable, stereo

MONITOR
8P

Pin	Output Signal
1	AUDIO MONITOR OUT (X)
2	VIDEO OUT (X)
3	NC
4	NC
5	AUDIO MONITOR OUT (G)
6	VIDEO OUT (G)
7	NC
8	NC

REMOTE CONTROL
REMOTE 1 (9P)

Pin	I/O Signal	I/O
1	FRAME GND	—
2	TRANSMIT A	O
3	RECEIVE B	I
4	RECEIVE COMMON	—
5	SPARE	—
6	TRANSMIT COMMON	—
7	TRANSMIT B	O
8	RECEIVE A	I
9	FRAME GND	—

2-11. SPARE PARTS

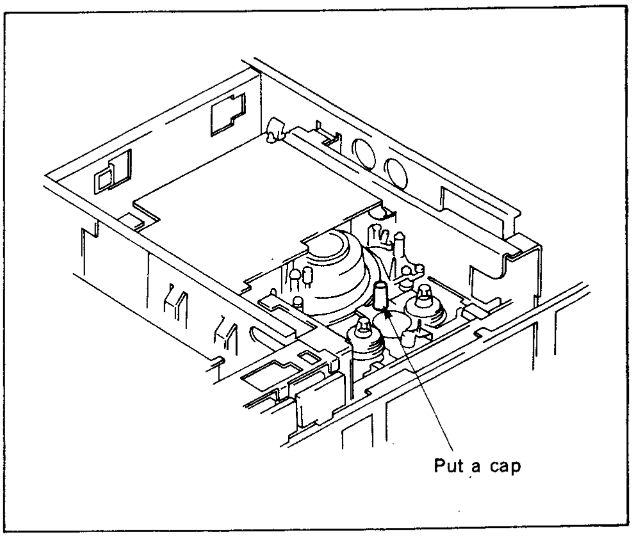
(1) The ⚠ -marked components are critical to safety. Replace only with the same components as specified.

(2) Replacement parts supplied from the Sony Parts Center will sometimes have a different shape from the original parts. This is due to **the use of improved parts and/or to engineering changes or standardization of genuine parts.** This manual's exploded views and electrical spare parts list indicate the part numbers of **the standardized genuine parts in use at present.** Regarding parts in our engineering department, refer to Sony service bulletins and service manual supplements.

(3) The parts marked with **s** in the SP column of the exploded views and electrical spare parts list are normally stocked for replacement purposes. The parts marked with **o** in the SP column are not normally required for routine service work. Orders for parts marked with **o** will be processed, but allow for additional delivery time.

2-12. MUTING OF TAPE BEGINNING SENSOR AND TAPE END SENSOR

Put a cap on the LED Assembly as shown in the figure.



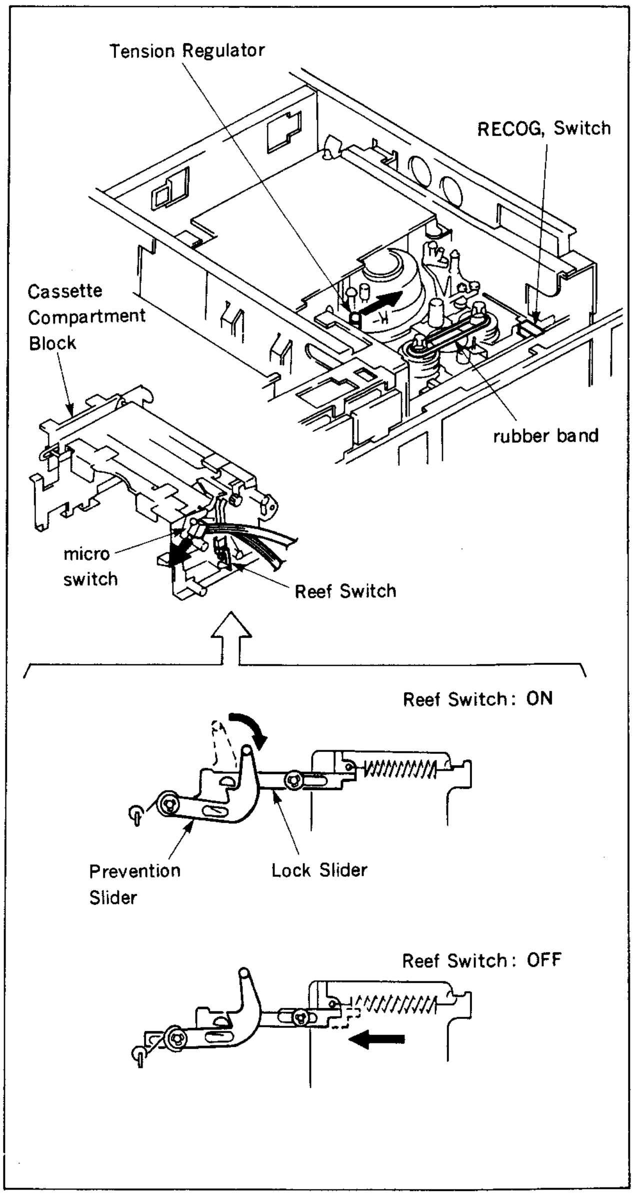
2-13. HOW TO OPERATE THE UNIT WITHOUT CASSETTE-UP COMPARTMENT AND CASSETTE

The unit will not operate if there is a strong light source near it.

1. How to select the unit into the THREADING mode.
   (1) Remove the Top Panel and Front Panel referring to Section 2-1.
   (2) Remove the Cassette Compartment Assembly referring to Section 2-3, but do not disconnect the connectors.
   (3) Turn the power to ON.
   (4) Stick an adhesive tape on the RECOG Switch so that the pins are pressed.
   (5) Release Cassette-up Comparmtment Block.
   (6) Turn the Reef Switch of the Cassette-up Compartment Block to ON.

2. How to select the unit into the Playback or Recording mode.
   (1) Select the unit into the Playback or Recording mode.
   (2) Hook a rubber band between S Reel table and T Reel Table.
   (3) Press the REC or PLAY Button on the Key Panel. If the T Reel Table starts rotating, press the Tension Regulator Arm Assembly in the direction of the arrow. At the same time the Tension Regulator Band is released and the S Reel Table Starts rotating.
   (4) If the unit selects into the STOP mode, press the STOP key on the Key Panel.

3. How to select the unit into the EJECT mode.
   (1) Press the EJECT Button on the MB-19 Board.


Tension Regulator
RECOG, Switch
Cassette Compartment Block
rubber band
micro switch
Reef Switch
Reef Switch: ON
Prevention Slider
Lock Slider
Reef Switch: OFF

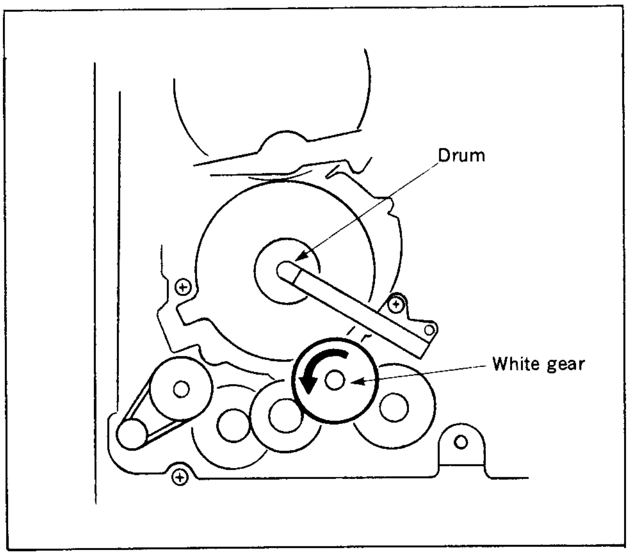
Note: The unit can be operated by means of switches on the MB-19 Board. If turn the POWER switch on the MB-19 Board to OFF, the unit can not be operated.

2-14. REMOVAL PROCEDURE OF THE CASSETTE TAPE WHEN NORMAL EJECTION IS NOT POSSIBLE

If a cassete-tape can not be ejected from the unit, carry out this adjustment.

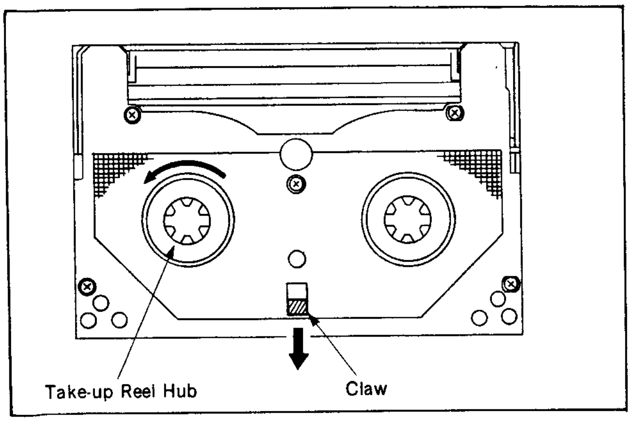
(1) Remove the Top Panel and Bottom Plate referring to Section 2-1.

(2) Remove the Mechanical Deck Block referring to Section 2-2. Turn a white gear near the Drum counterclockwise. Release a winding tape from the Drum.


Drum
White gear

(3) Remove the Cassette-up Compartment Block referring to Section 2-3 inserting the cassette tape. Be careful not to hook the tape around.

(4) Turn Take-up Reel Hub counterclockwise pushing the claw of the cassette in the direction of arrow. Wind the tape into the cassette by means of a hand.


Take-up Reel Hub
Claw

(5) Remove the cassette tape from the Cassette-up Compartment Block. There are two ways as follows.

1. Turn Worm Gear in the direction of the arrow pushing Lock Slider in the direction of the arrow. Cassette Holder will rise gradually and the cassette tape can be ejected.

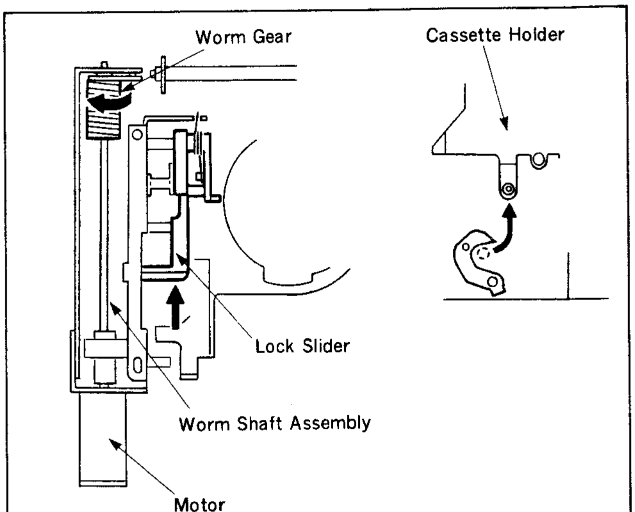

Worm Gear
Cassette Holder
Lock Slider
Worm Shaft Assembly
Motor

Fig. 1

2. Remove two fixing screws and remove Motor Bracket, Motor and Worm Shaft Assembly. Push the Lock Slider in the direction of the arrow. Raise the Cassette Holder by means of a hand and the cassette tape can be ejected.

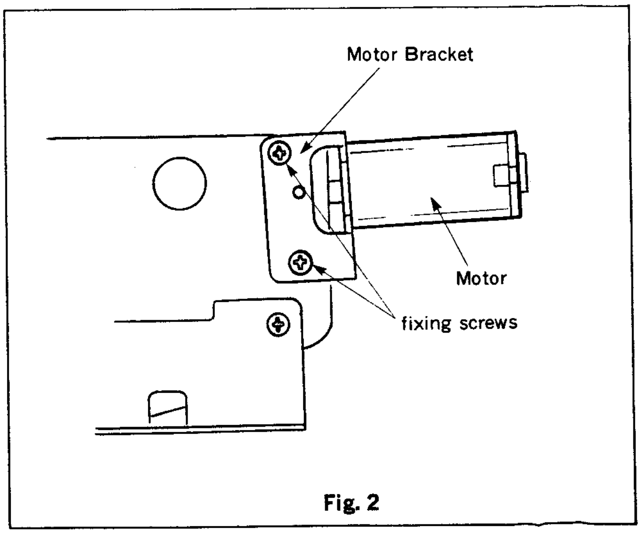

Motor Bracket
Motor
fixing screws

Fig. 2

2-15. FIXTURE

Ref. No.	Parts No.	Description	Application
J-1	Y-2031-001-1	Cleaning Fluid	Cleaning
J-2	7-741-900-53	Wiping Cloth	Cleaning
J-3	Commercially sold	Head Degausser	Head degauss
J-4	J-6080-840-A	Small Adjustment Mirror	Tape path adjustment
J-5	8-967-995-02	Alignment Tape, WR5-1NP	Tape path adjustment
	8-967-995-13	Alignment Tape, WR5-7NE	Video frequency response adjustment
	8-967-995-42	Alignment Tape, WR5-5NSP	Video adjustment
	8-967-995-43	Alignment Tape, WR5-8NSE	Serve, audio and video adjustment (SP)
	8-967-995-52	Alignment Tape, WR5-8NLE	Servo, audio and video adjustment (LP)
J-6	J-6080-827-A	Dial Tension Gauge	Measurement of torque
J-7	J-6080-831-A	Tension Measurement Reel	FWD Back tension adjustment
J-8	J-6080-832-A	Tension Measurement Reel	Brake torque check
J-9	J-6080-823-A	No. 10 Gear Phase Tool	Threading ring assembly replacemnt
J-10	J-6080-826-A	No. 6 Guide Lock Screwdriver	Tape path adjustment
J-11	———	Rotary Drum Tool (packed with the Rotary Upper Drum for repair)	Rotary upper drum replacement
J-12	J-6080-824-A	FWD, RVS Winding Torque Cassette	S•T reel table winding torque check
J-13	J-6080-825-A	Mode Selector	Mechanical check, adjustment and replacement
J-14	J-6080-891-A	Track Shift Tool	Tape path adjustment
J-15	J-6080-883-A	RE/SWP Connector	Tape path adjustment
J-16	J-6080-884-A	CTL Connector	Tape path adjustment
J-17	7-700-766-01	Hexagonal Screwdriver (0.89 mm)	Tape path adjustment

2-16. SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

Check the metal trim, **metallized** knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as dexcreibed below.

LEAKAGE TEST

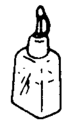
The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis must not exceed 0.5mA (500 microampers). Leakage current can be measured by any one of three methods.

(1) A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufactur's instructions to use these instruments.

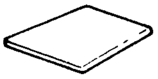
(2) A battery-operated AC milliammeter. The Date Precision 245 digital multimeter is suitable for this job.

(3) Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The **limit** indication is 0.75, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

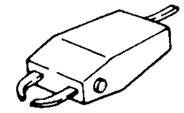
J-1



J-2



J-3



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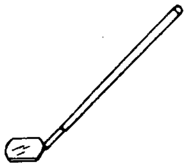
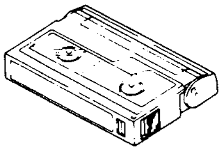
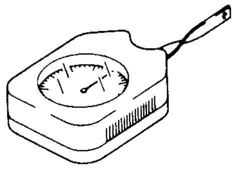


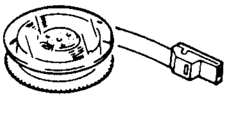
J-5



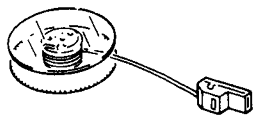
J-6



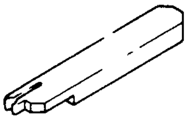
J-7



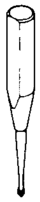
J-8



J-9

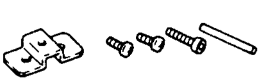


J-10

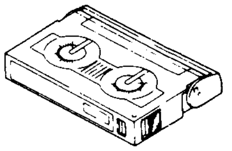


J-11

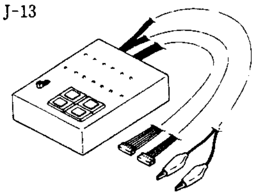
(Packed with the rotary upper drum for repair)



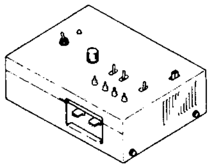
J-12



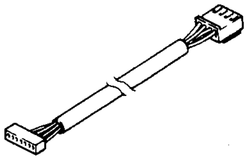
J-13



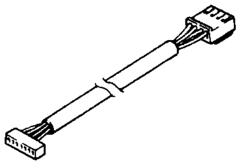
J-14



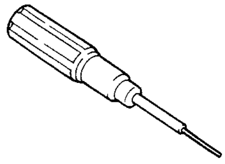
J-15



J-16



J-17



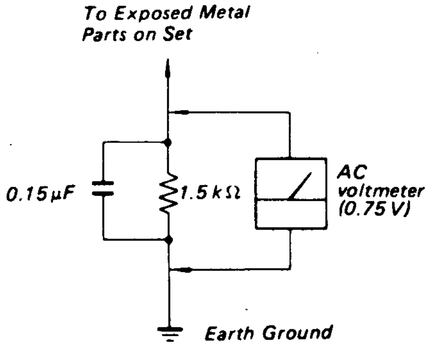

To Exposed Metal Parts on Set
0.15μF
1.5 kΩ
AC voltmeter (0.75 V)
Earth Ground

Fig. A. Using an AC voltmeter to check AC leakage.

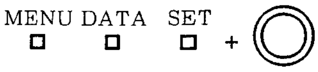
2-17. DIAL MENU OPERATION

The system controls (Still Timer, Preroll Time, etc.) initially set at the factory can be arbitrarily modified using the SEARCH dial, MENU button, DATA button, and SET button.

The dial menu has the following functions:

- . BASIC FUNCTION
- . ENHANCED FUNCTION

2-17-1. Button and Dial Settings



Search dial: Selects the ITEM, Modifies the DATA, Moves the cursor.
MENU button: Selects the ITEM when used with a SEARCH dial.
DATA button: Modifys the DATA when used with a SEARCH dial.
SET button : Writes the DATA into the memory.

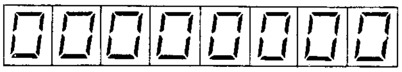
2-17-2. Operation

Put the unit into DIAL MENU operation mode

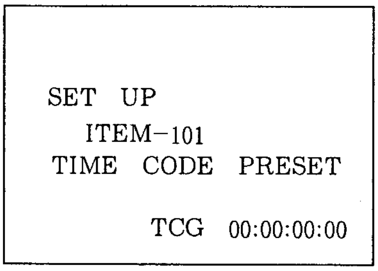
The DIAL MENU opration data appears on the Front Panel's time counter display and monitor television (the video signals should be connected to the VIDEO IN connector and the monitor television should be connected to the MONITOR OUT connector on the Connector Panel).

(1) Set the REMOTE/LOCAL switch on the Front Panel to LOCAL.
(2) Put the unit into JOG mode (when the SHUTTLE lamp is on, press the SEARCH dial).
(3) Press the STOP button and put into the STOP mode or PLAY PAUSE mode.
(4) Set the CTL/TC/DIAL MENU switch on the Front Panel to DIAL MENU.
The unit is put into the DIAL MENU mode and the ◁□▷ lamp at the top of the SEARCH dial lights.

time counter display



Monitor



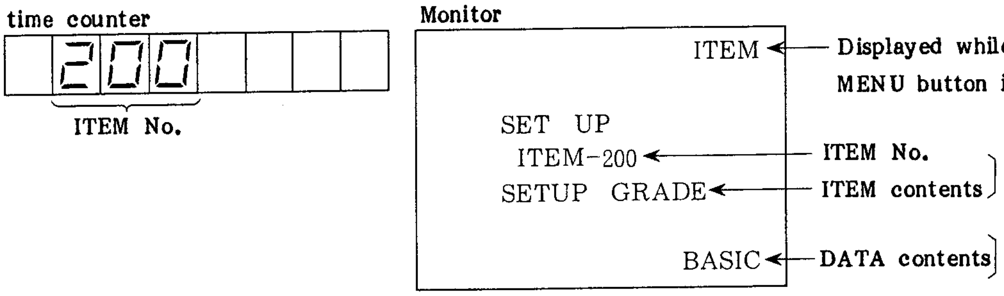
SET UP
ITEM-101
TIME CODE PRESET

TCG 00:00:00:00

(NOTE) The VTR cannot be operated normally in the DIAL MENU operation mode.

Select the ITEM

(5) Turn the SEARCH dial while pressing the MENU button.


time counter
200
ITEM No.
Monitor
ITEM
SET UP
ITEM-200
SETUP GRADE
BASIC
ITEM No.
ITEM contents
DATA contents

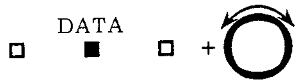
Displayed while the MENU button is pressed.

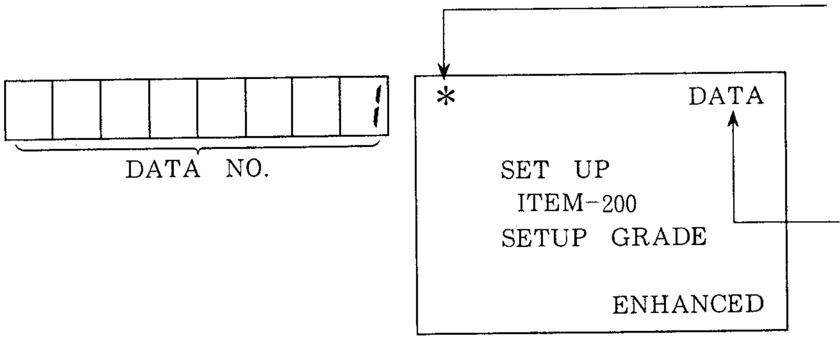
When the SEARCH dial is turned, the ITEM No. and contents are changed. The data corresponding to the ITEM No. are displayed.

(6) Stop the dial when the desired ITEM is displayed, and then release the MENU button.
When the DATA No. on the time counter display and DATA contents on the monitor blink, they can be modified as following method.

Modify the data

(7) Turn the dial while pressing the DATA button.




1
DATA NO.
*
DATA
SET UP
ITEM-200
SETUP GRADE
ENHANCED

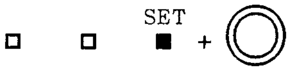
When data other than that set at the factory is displayed on the monitor, an asterisk (*) appears. (but does not appear on the time counter display.)

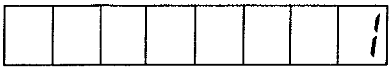
Displayed while the DATA button is pressed.

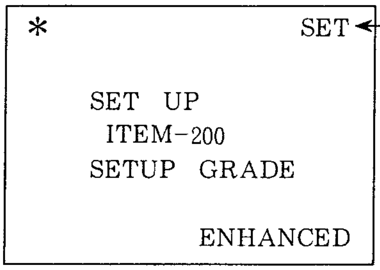
(8) Stop the dial when the desired data is displayed, and release the DATA button.

Set the data

(9) Press the SET button.







* SET

SET UP
ITEM-200
SETUP GRADE

ENHANCED

SET ← Displayed while the SET button is pressed. (For ITEM No. 101 is displayed only when data is set.)

- The displayed data is written into the memory, the data remains unchanged even if the POWER switch is turned OFF.
- If the updated data is set, the ◁□▷ lamp at the top of the SEARCH dial flashes for one second when the SET button is pressed. The DATA No. and DATA content blinking stops at that time.

2-17-3. ITEM/DATA

(1) BASIC FUNCTION

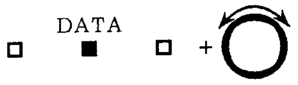
ITEM		DATA		ITEM and DATA Description
ITEM No. time counter	ITEM content monitor display	DATA No. time counter	DATA content monitor display	
101	TIME CODE PRESET	00000000 ~ 23595929	TCG00:00:00:00 ~ TCG23:59:59:29	Time code setting. 00H00M00S00Fr through 23H59M59S29Fr can be set. Factory setting: DATA No. 00000000 (TCG 00 : 00 : 00 : 00)
105	CHARACTER POSITION	0 ~ 15	OFF 1 ~ 15	Set the character position that is super-imposed on the monitor (only the vertical direction). When set to OFF, the character is not displayed. Factory setting: OFF
106	CHARACTER SIZE	0 1	SMALL LARGE	Set the character size that is displayed on the monitor. Factory setting: DATA No.0 (SMALL)
200	SETUP GRADE	0 1	BASIC ENHANCED	DATA No. 0 BASIC: Enable to select ITEM from 101 to 200 in the DIAL MENU operation. DATA No. 1 ENHANCED: Enable to select ITEM from 101 to 227 in the DIAL MENU operation. Factory setting: DATA No. 0 (BASIC)

Setting the data in the ITEM No.101

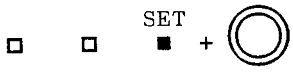
(NOTE).Select whether the LTC time code should be used in the DF mode or NDF mode in the ITEM No. 202.
.Select the TIME CODE SLAVE MODE in the ITEM No. 227.

1. Turn the SEARCH dial and blink the desired digit.

2. Turn the dial while pressing the DATA button to set the desired figures.



3. Repeat the steps 1, 2 to set the desired figures.
4. When completed, press the SET button.



(2) ENHANCED FUNCTION

The ENHANCED FUNCTION can be used by setting data to ENHANCED in the ITEM No. 200.

ITEM		DATA		ITEM and DATA Description
ITEM No. time counter	ITEM content monitor display	DATA No. time counter	DATA content monitor display	
201	ERROR STATUS		NONE	Self-diagnostic function. When trouble occurs during normal operation, message "ERROR CODE" appears on the Front Panel's time counter display in any mode. When the unit is put into the DIAL MENU mode to select this ITEM, error status corresponding to the error code are displayed on the monitor. (Refer to Section 2-17-4 for further details.) NOTE: The ITEM data content cannot be modified. Normal operation: ···············(NONE)
		Error 02	TAPE SLACK	
		Error 10	HUMID	
		Error 20	SYSTEM ERROR	
		Error 21		
		Error 22	SYSTEM ERROR 50	
		Error 90		
		Error 99		
202	DF/NDF SELECT	0	NDF	Selects whether the LTC time code should be used in the DF mode or NDF mode. DATA No. 0 NDF: Non Drop Frame mode DATA No. 1 DF: Drop Frame mode Note: After mode setting, be sure to preset the time code in the ITEM No. 101. Factory setting: DATA No. 0 (NDF)
		1	DF	
205	HOUR METER (DRUM)	00000 | 15000	00000H | 15000H	Displays the rotation time of the upper drum. Head replacement can be decided at that time. Up to from 0H to 15000H can be displayed. NOTE: The ITEM data content cannot be modified.
206	HOUR METER	00000 | 15000	00000H | 15000H	Displays the total time of the power on sequence. Up to from 0H to 15000H can be displayed. NOTE: The ITEM data content cannot be modified.
207	STILL TIMER	00	0.5 SEC.	The unit automatically enters the tape PROTECTION mode after it has been in the tape STOP (or STILL) mode for a fixed time to prevent the video head from clogging (to reduce the tape damage). This item sets the transition time of the tape STOP to tape PROTECTION mode. The time can be set from 0.5 seconds to 7 minutes.
		01	1 SEC.	
		02	5 SEC.	
		03	10 SEC.	
		04	20 SEC.	
		05	30 SEC.	
		06	40 SEC.	
		07	50 SEC.	
		08	1 MIN.	
		09	2 MIN.	
		10	3 MIN.	
		11	4 MIN.	
		12	5 MIN.	
		13	6 MIN.	
		14	7 MIN.	
		15	7 MIN.	Factory setting: DATA No. 15 (7 MIN)

ITEM		DATA		ITEM and DATA Description
ITEM No. time counter	ITEM content monitor display	DATA No. time counter	DATA content monitor display	
209	SELECTION FOR SEARCH DIAL ENABLE	0 1	DIAL DIRECT VIA SEARCH BUTTON	When the SEARCH dial is turned or the SEARCH button is pressed, the unit enters the SEARCH mode. This item sets entering the SEARCH mode. DATA No. 0 DIAL DIRECT : When the SEARCH dial is turned, the unit enters the SEARCH mode from any mode other than REC/EDIT. DATA No. 1 VIA SEARCH BUTTON : When the SEARCH button is pressed, the unit enters the SEARCH mode. Factory setting : DATA No.1 (VIA SEARCH BUTTON)
214	PREROLL TIME	00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15	0 SEC. 1 SEC. 2 SEC. 3 SEC. 4 SEC. 5 SEC. 6 SEC. 7 SEC. 8 SEC. 9 SEC. 10 SEC. 11 SEC. 12 SEC. 13 SEC. 14 SEC. 15 SEC.	Sets the preroll time during editing. The preroll time can be set from 0 to 15 seconds. Factory setting : DATA No. 05 (5 SEC).
218	PINCH ON DELAY	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	Adjusts the time required from PLAY command sending to tape transport. Factory setting : DATA No. 3 (3)

ITEM		DATA		ITEM and DATA Description
ITEM No. time counter	ITEM content monitor display	DATA No. time counter	DATA content monitor display	
224	TAPE PROTECTION MODE	0 1	STEP FWD LONG PAUSE	When the time in the SEARCH STILL mode set using ITEM No. 207 passes, selects the mode setting. DATA No. 0 STEP FWD : The tape is sent repeatedly for one second at 1/30 times normal speed in the forward direction. DATA No. 1 LONG PAUSE : Enters the LONG PAUSE mode. Factory setting : DATA No. 0 (STEP FWD)
226	DIGITAL CNR LEVEL	0 1 2	OFF 1 2	Croma Noise Reduction OFF 1 : minimum 2 : maximum Factory Setting : DATA No. 2 (2)
227	TIME CODE SLAVE MODE	0 1	OFF ON	ON : When straing the record from portion which the time code has already recorde, the time code is recorded continuously. When staring the record from portion which the time code is not recorded, it is recorded from "00 : 00 : 00" OFF : The time code is recorded from the Time Code Preset Data which is set by menu 101. Factory Setting : DATA No. 1 (ON)

2-17-4. System Error

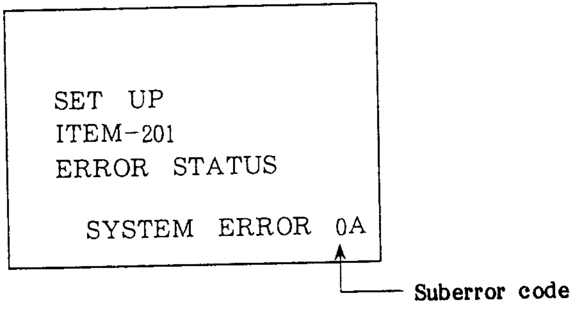
When a trouble occurs during normal operation and an error code appears on the time counter display of the Front Panel, the error status corresponding to the error code is displayed on the monitor by selecting the Item No. 201 on the dial menu. The error cause can be learned at that time.

Counter display	Monitor display	Description
Error 02	TAPE SLACK	Excessive tape tension
Error 10	HUMID	The condensation
Error 20	SYSTEM ERROR	Mechanical error. Distinguished by the suberror code. (Refer to the following.)
Error 21	——	RAM error when the POWER is ON.
Error 22	SYSTEM ERROR	Communication error between optional BKU-703 A and the unit.
Error 90	——	Communication error between SY board and KY board.
Error 99	——	Lacking the 1/2 VD pulse to supply for the SY board.

(NOTE) Displayed on the time counter display about ERROR 21, 90,99.

When Error 20 "SYSTEM ERROR" appears, a suberror code is displayed at the lower right corner on the monitor.
The suberror code is described below.

Monitor



SET UP
ITEM-201
ERROR STATUS

SYSTEM ERROR 0A

The suberror code is a two-digit hexadecimal number. Assume that the high-order digit is called Error 1 and tje low-order digit called Error 0.

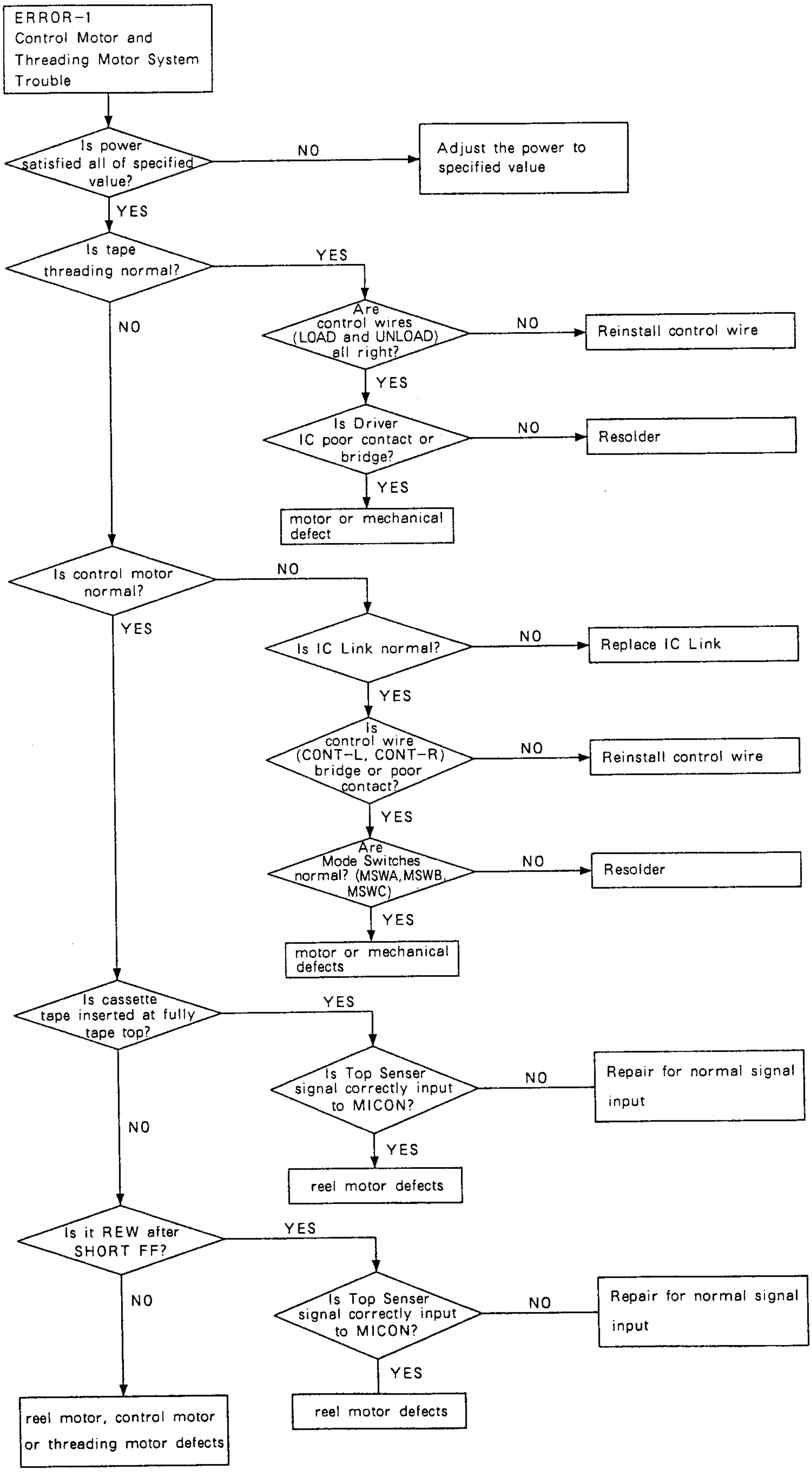
Error 0

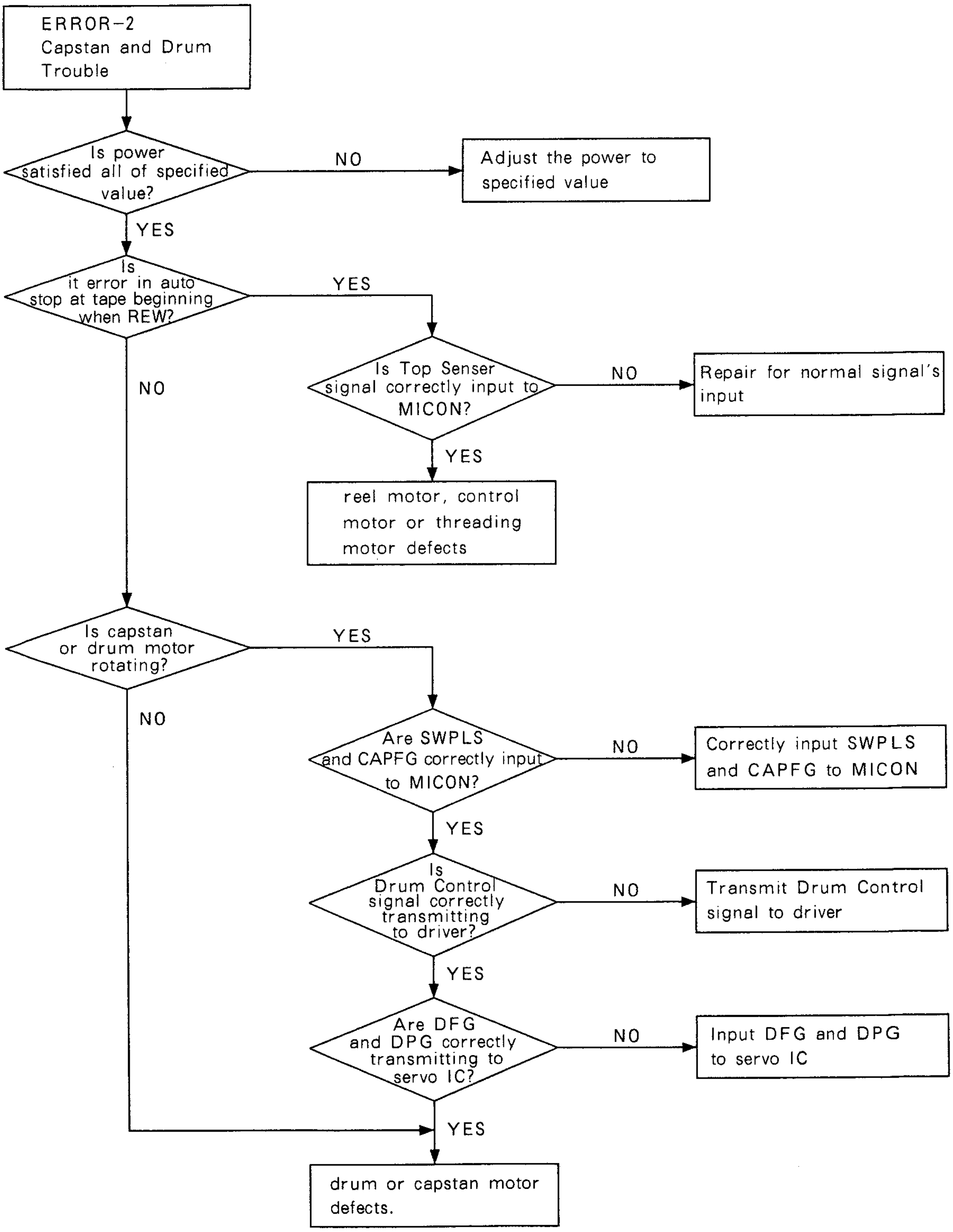
0	Normal operation
1	Control signal error of threading motor and control motor systems, error of reel motor, or communication error of TOP/END sensor.
2	Tape top error or control signal error of drum/capstan.
3	Error of Cassette-up Comparrment, Cassette-up Motor, control line and mechanical switch.
4	Communication error between mechanical control and ATF control.
5	Communication error between microcomputor M1 and mechanical Block.

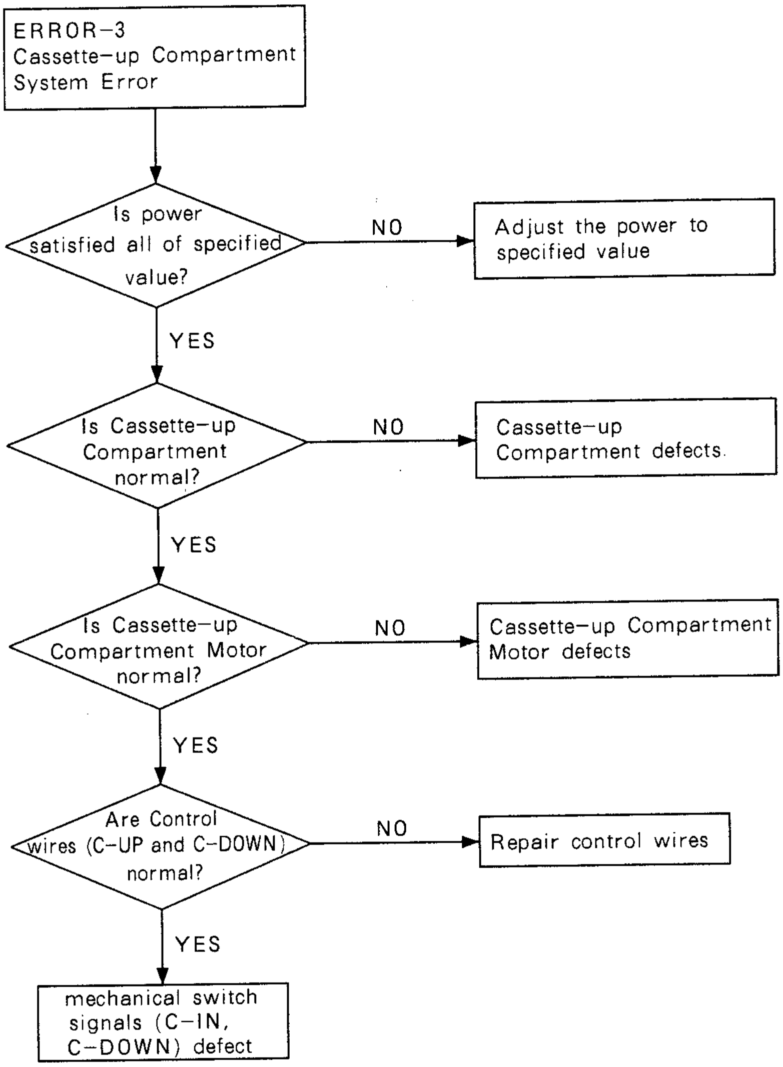
Error 1

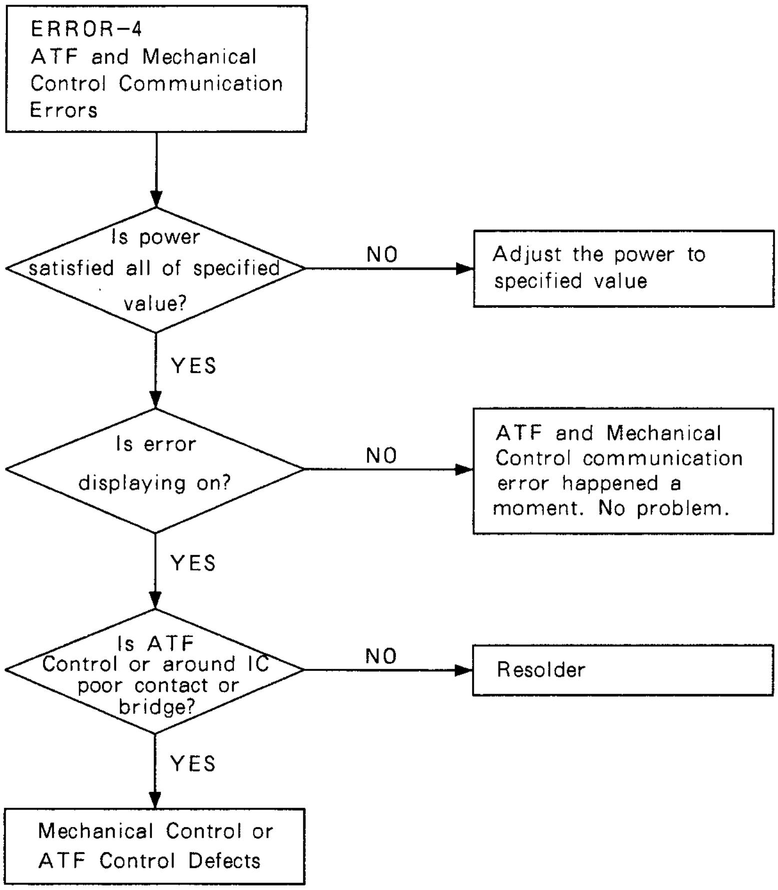
0	Normal operation

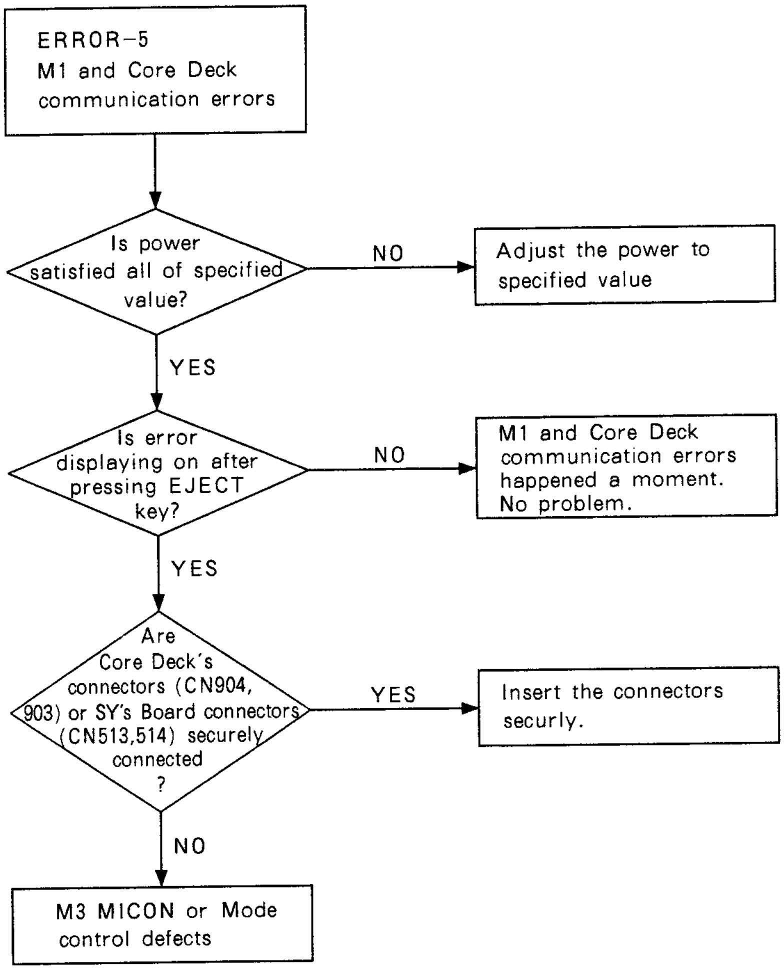
FLOW CHART


ERROR-1
Control Motor and
Threading Motor System
Trouble
Is power satisfied all of specified value?
NO
Adjust the power to specified value
YES
Is tape threading normal?
YES
Are control wires (LOAD and UNLOAD) all right?
NO
Reinstall control wire
YES
Is Driver IC poor contact or bridge?
NO
Resolder
YES
motor or mechanical defect
NO
Is control motor normal?
NO
Is IC Link normal?
NO
Replace IC Link
YES
Is control wire (CONT-L, CONT-R) bridge or poor contact?
NO
Reinstall control wire
YES
Are Mode Switches normal? (MSWA,MSWB, MSWC)
NO
Resolder
YES
motor or mechanical defects
YES
Is cassette tape inserted at fully tape top?
YES
Is Top Senser signal correctly input to MICON?
NO
Repair for normal signal input
YES
reel motor defects
NO
Is it REW after SHORT FF?
YES
Is Top Senser signal correctly input to MICON?
NO
Repair for normal signal input
YES
reel motor defects
NO
reel motor, control motor or threading motor defects


ERROR−2 Capstan and Drum Trouble
Is power satisfied all of specified value?
NO
Adjust the power to specified value
YES
Is it error in auto stop at tape beginning when REW?
YES
Is Top Senser signal correctly input to MICON?
NO
Repair for normal signal's input
YES
reel motor, control motor or threading motor defects
NO
Is capstan or drum motor rotating?
YES
Are SWPLS and CAPFG correctly input to MICON?
NO
Correctly input SWPLS and CAPFG to MICON
YES
Is Drum Control signal correctly transmitting to driver?
NO
Transmit Drum Control signal to driver
YES
Are DFG and DPG correctly transmitting to servo IC?
NO
Input DFG and DPG to servo IC
NO
YES
drum or capstan motor defects.


ERROR–3
Cassette–up Compartment System Error
Is power satisfied all of specified value?
NO
Adjust the power to specified value
YES
Is Cassette–up Compartment normal?
NO
Cassette–up Compartment defects.
YES
Is Cassette–up Compartment Motor normal?
NO
Cassette–up Compartment Motor defects
YES
Are Control wires (C–UP and C–DOWN) normal?
NO
Repair control wires
YES
mechanical switch signals (C–IN, C–DOWN) defect


ERROR-4
ATF and Mechanical Control Communication Errors
Is power satisfied all of specified value?
NO
Adjust the power to specified value
YES
Is error displaying on?
NO
ATF and Mechanical Control communication error happened a moment. No problem.
YES
Is ATF Control or around IC poor contact or bridge?
NO
Resolder
YES
Mechanical Control or ATF Control Defects


ERROR-5
M1 and Core Deck communication errors
Is power satisfied all of specified value?
NO
Adjust the power to specified value
YES
Is error displaying on after pressing EJECT key?
NO
M1 and Core Deck communication errors happened a moment. No problem.
YES
Are Core Deck's connectors (CN904, 903) or SY's Board connectors (CN513,514) securely connected ?
YES
Insert the connectors securly.
NO
M3 MICON or Mode control defects

2-18. TIMING CHART

Movement modes about ※ 1 through ※ 6 in the Timing Chart are shown by these tables.

※ 1 : Control Motor Control

Control Motor Rotating Direction	CONT L ←——→ CONT R (clokcwise direction) (counterclockwise direction)								
Control Position (code) / Control Switch Input	EJECT (4)	BLANK (7)	LOAD/ UNLOAD (2)	BLANK (7)	FF/REW (6)	BLANK (7)	STOP (3)	BLANK (7)	FWD (1)
CONT C (IC003 ⑭)	H	H	L	H	H	H	L	H	L
CONT B (IC003 ⑬)	L	H	H	H	H	H	H	H	L
CONT A (IC003 ⑫)	L	H	L	H	L	H	H	H	H

※ 2 : Loading Motor Control

Control Motor Rotating Direction	Unthreading ←——→ Threading								
Motor Position (code) / Loading Switch Input	LOADING TOP (1)	BLANK (7)	UNLOAD WAIT (5)	BLANK (7)	DRUM START (4)	BLANK (7)	T REEL START (6)	BLANK (7)	LOADING END (3)
LOAD SW C (IC003 ⑱)	L	H	H	H	H	H	H	H	L
LOAD SW B (IC003 ⑰)	L	H	L	H	L	H	H	H	H
LOAD SW A (IC003 ⑯)	H	H	H	H	L	H	L	H	H

※3 : Casecon Motor Control Output

UP	DOWN	Motor Drive
L	L	No drive
L	H	Drives in down direction
H	L	Drives in up direction
H	H	Short brake

※ 4 : Loading Motor Control Output

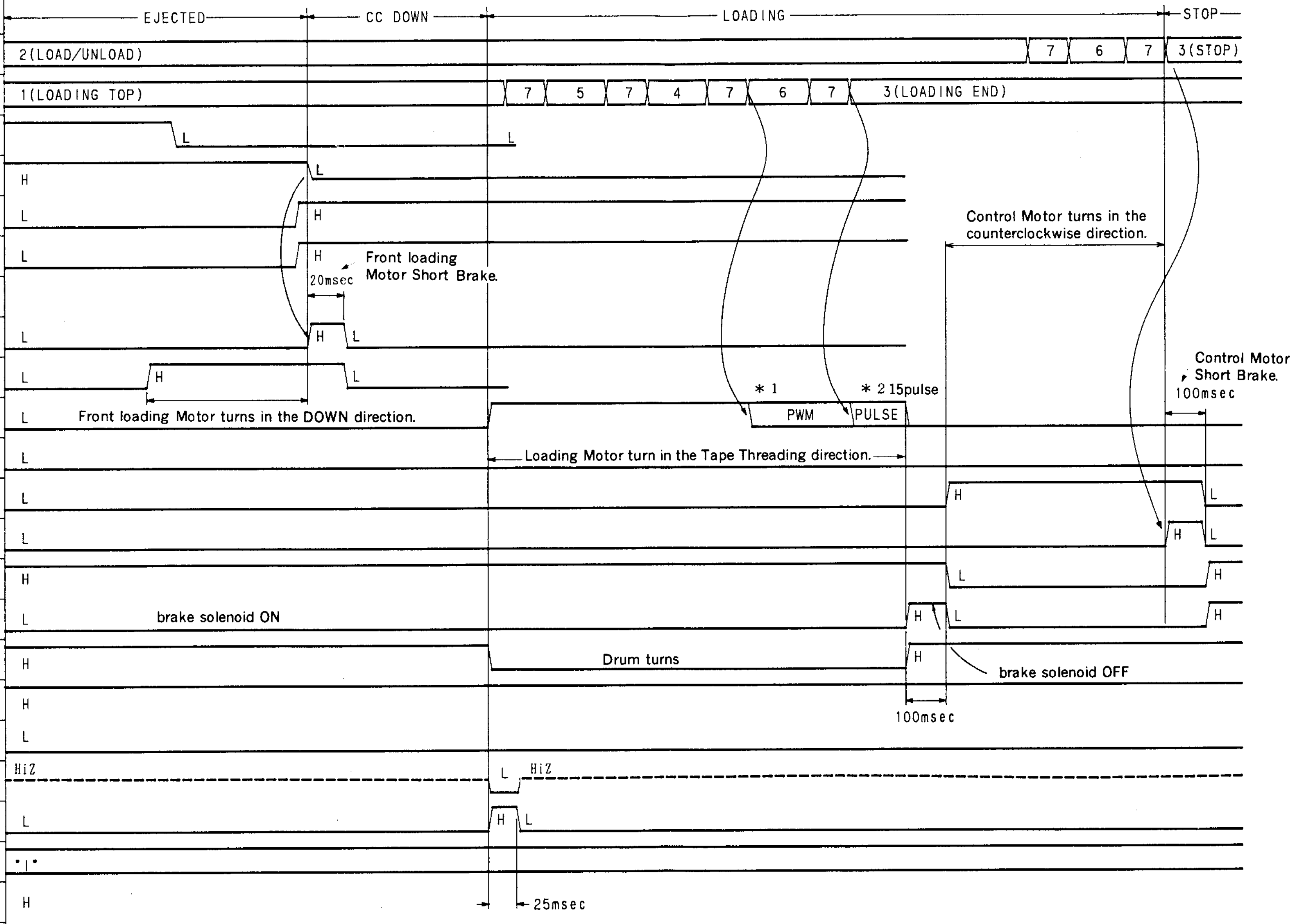
LOAD	UNLOAD	Motor Drive
L	L	No drive
L	H	Drives in unloading direction
H	L	Drives in loading direction
H	H	Short brake

※ 5 : Control Motor Output

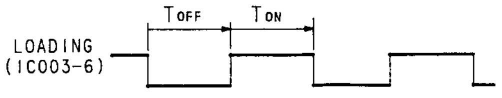
CONT L	CONT R	Motor Drive
L	L	No drive
L	H	Drives the slider at a control position to the right
H	L	Drives the slider at a control position to the left
H	H	Short brake

1. EJECTED → CC DOWN → LOADING → STOP

SIGNAL	L	H	MEASURING POINT SE-10 BOARD (PIN NO)
MODE SW A,B,C	※1		IC003-12,13,14
LOADING SW A,B,C	※2		IC003-16,17,18
CASSETTE IN	ON	OFF	IC003-46
CASSETTE DOWN	ON	OFF	IC003-47
TAPE TOP	ON	OFF	IC003-54
TAPE END	ON	OFF	IC003-55
DRM ROT	ON	OFF	IC003-61, 62, 63
CASECON UP	※3		IC003-8
CASECON DOWN			IC003-9
LOADING	※4		IC003-6
UNLOADING			IC003-7
CONTROL R	※5		IC003-20
CONTROL L			IC003-21
START	ON	OFF	IC003-22
HOLD	ON	OFF	IC003-23
DRUM ON	ON	OFF	IC002-8
CAPSTAN ON	ON	OFF	IC002-4
CAPSTAN $\overline{\text{FWD}}$/RVS	FWD	RVS	IC002-5
REEL $\overline{\text{FWD}}$/RVS	FWD	RVS	IC002-60
REEL BRAKE	ON	OFF	IC002-62
CAPSTAN SPEED	——		IC002-16to20
CUE	CUE	STOP	IC002-51
REV	REV	STOP	IC002-52
SLOW	NOT SLOW	SLOW	IC002-22
AUTO (HEAD SWITCHING)	obey MPU	obey RF	IC002-38
ATF CS (MPU COMMUNICATION)	COMMUNICATION OK	STOP	IC002-43
RP PB MODE	REC	PB EE(STOP)	IC002-44
FLYING ERASE ON	ON	OFF	IC002-29
JOG	NORMAL PB	variable speed playback	IC002-9


EJECTED
CC DOWN
LOADING
STOP
2(LOAD/UNLOAD)
7
6
7
3(STOP)
1(LOADING TOP)
7
5
7
4
7
6
7
3(LOADING END)
L
H
Front loading Motor Short Brake.
20msec
Control Motor turns in the counterclockwise direction.
Control Motor Short Brake.
100msec
Front loading Motor turns in the DOWN direction.
＊1
＊2 15pulse
PWM
PULSE
Loading Motor turn in the Tape Threading direction.
brake solenoid ON
Drum turns
brake solenoid OFF
100msec
HiZ
25msec
•|•
"STOP"

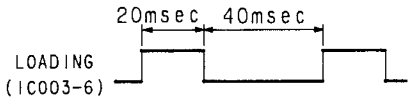
＊1 Loading Motor PWM Driving from T Reel Start position to LOADING END position.


LOADING
(IC003-6)
TOFF
TON

T OFF=28msec ------fix
T ON=(28-n)msec n=0, 1, 2, .. 18

PWM Driving is ended when it becames LOADING END position on the way.

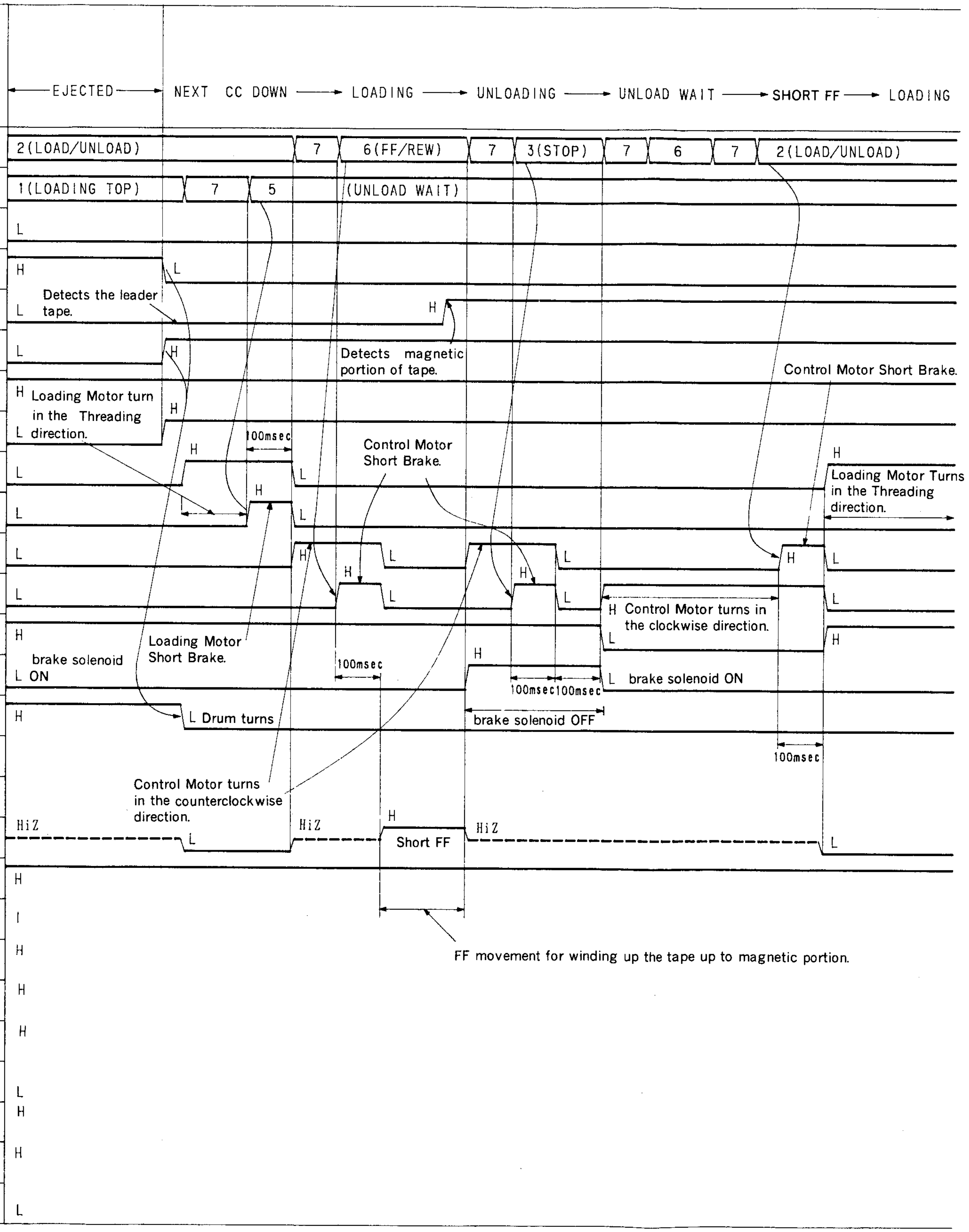
＊2 Loading Motor pulse driving in the LOADING END.


20msec
40msec
LOADING
(IC003-6)

Drives for fifteen pulse since it becomes LOADING END position.

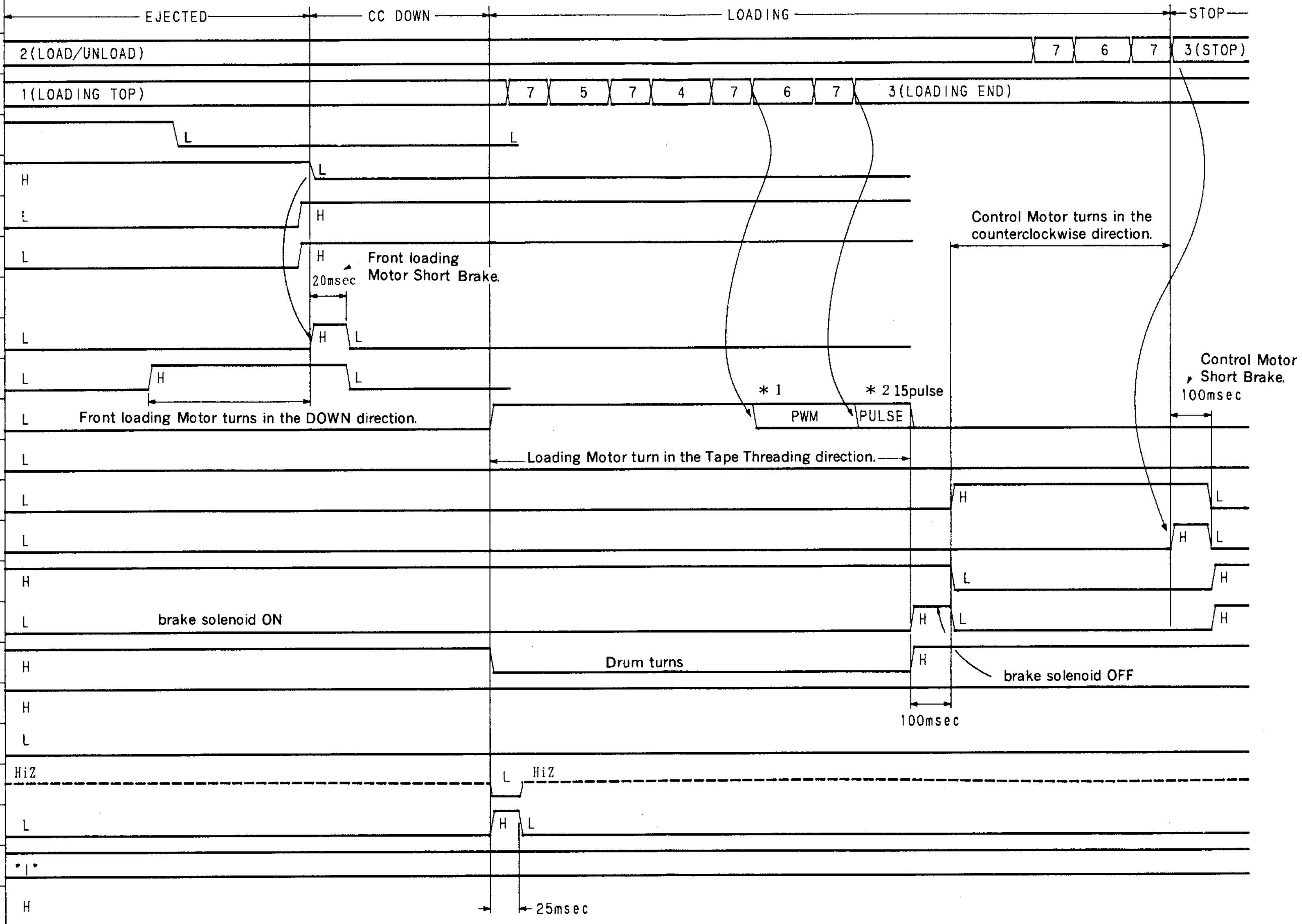
2. EJECTED → CC DOWN → LOADING → UNLOADING → UNLOAD WAIT → SHORT FF → LOADING

SIGNAL	L	H	MEASURING POINT SE-10 BOARD (PIN NO)
MODE SW A,B,C	※1		IC003-12,13,14
LOADING SW A,B,C	※2		IC003-16,17,18
CASSETTE IN	ON	OFF	IC003-46
CASSETTE DOWN	ON	OFF	IC003-47
TAPE TOP	ON	OFF	IC003-54
TAPE END	ON	OFF	IC003-55
CASECON UP	※3		IC003-8
CASECON DOWN			IC003-9
LOADING	※4		IC003-6
UNLOADING			IC003-7
CONTROL R	※5		IC003-20
CONTROL L			IC003-21
START	ON	OFF	IC003-22
HOLD	ON	OFF	IC003-23
DRUM ON	ON	OFF	IC002-8
CAPSTAN ON	ON	OFF	IC002-4
CAPSTAN $\overline{\text{FWD}}$/RVS	FWD	RVS	IC002-5
REEL $\overline{\text{FWD}}$/RVS	FWD	RVS	IC002-60
REEL BRAKE	ON	OFF	IC002-62
CAPSTAN SPEED	——		IC002-16to20
CUE	CUE	STOP	IC002-51
REV	REV	STOP	IC002-52
SLOW	NOT SLOW	SLOW	IC002-22
AUTO (HEAD SWITCHING)	obey MPU	obey RF	IC002-38
RP PB MODE	REC	PB EE(STOP)	IC002-44
FLYING ERASE ON	ON	OFF	IC002-29
JOG	NORMAL PB	Variable Speed playback	IC002-9

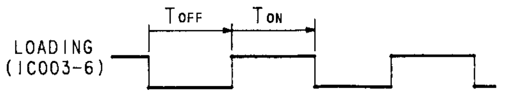

EJECTED
NEXT CC DOWN → LOADING → UNLOADING → UNLOAD WAIT → SHORT FF → LOADING
2(LOAD/UNLOAD)
7
6(FF/REW)
7
3(STOP)
7
6
7
2(LOAD/UNLOAD)
1(LOADING TOP)
7
5
(UNLOAD WAIT)
Detects the leader tape.
Detects magnetic portion of tape.
Control Motor Short Brake.
Loading Motor turn in the Threading direction.
100msec
Control Motor Short Brake.
Loading Motor Turns in the Threading direction.
H Control Motor turns in the clockwise direction.
Loading Motor Short Brake.
brake solenoid ON
100msec
100msec
100msec
brake solenoid ON
brake solenoid OFF
Drum turns
100msec
Control Motor turns in the counterclockwise direction.
HiZ
HiZ
HiZ
Short FF
FF movement for winding up the tape up to magnetic portion.
H
L
I

1. EJECTED → CC DOWN → LOADING → STOP

SIGNAL	L	H	MEASURING POINT SE-10 BOARD (PIN NO)
MODE SW A,B,C	※1		IC003-12,13,14
LOADING SW A,B,C	※2		IC003-16,17,18
CASSETTE IN	ON	OFF	IC003-46
CASSETTE DOWN	ON	OFF	IC003-47
TAPE TOP	ON	OFF	IC003-54
TAPE END	ON	OFF	IC003-55
DRM ROT	ON	OFF	IC003-61, 62, 63
CASECON UP	※3		IC003-8
CASECON DOWN			IC003-9
LOADING	※4		IC003-6
UNLOADING			IC003-7
CONTROL R	※5		IC003-20
CONTROL L			IC003-21
START	ON	OFF	IC003-22
HOLD	ON	OFF	IC003-23
DRUM ON	ON	OFF	IC002-8
CAPSTAN ON	ON	OFF	IC002-4
CAPSTAN $\overline{\text{FWD}}$/RVS	FWD	RVS	IC002-5
REEL $\overline{\text{FWD}}$/RVS	FWD	RVS	IC002-60
REEL BRAKE	ON	OFF	IC002-62
CAPSTAN SPEED	——		IC002-16to20
CUE	CUE	STOP	IC002-51
REV	REV	STOP	IC002-52
SLOW	NOT SLOW	SLOW	IC002-22
AUTO (HEAD SWITCHING)	obey MPU	obey RF	IC002-38
ATF CS (MPU COMMUNICATION)	COMMUNICATION OK	STOP	IC002-43
RP PB MODE	REC	PB EE(STOP)	IC002-44
FLYING ERASE ON	ON	OFF	IC002-29
JOG	NORMAL PB	variable speed playback	IC002-9


EJECTED
CC DOWN
LOADING
STOP
2(LOAD/UNLOAD)
7
6
7
3(STOP)
1(LOADING TOP)
7
5
7
4
7
6
7
3(LOADING END)
L
H
20msec
Front loading Motor Short Brake.
Front loading Motor turns in the DOWN direction.
* 1
* 2 15pulse
PWM
PULSE
Loading Motor turn in the Tape Threading direction.
Control Motor turns in the counterclockwise direction.
Control Motor Short Brake.
100msec
brake solenoid ON
brake solenoid OFF
Drum turns
100msec
HiZ
"1"
25msec
"STOP"

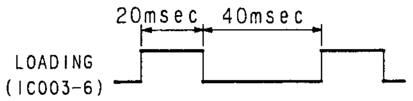
* 1 Loading Motor PWM Driving from T Reel Start position to LOADING END position.


TOFF
TON
LOADING (IC003-6)

T OFF=28msec ‐‐‐‐fix
T ON=(28−n)msec n=0, 1, 2, .. 18

PWM Driving is ended when it becames LOADING END position on the way.

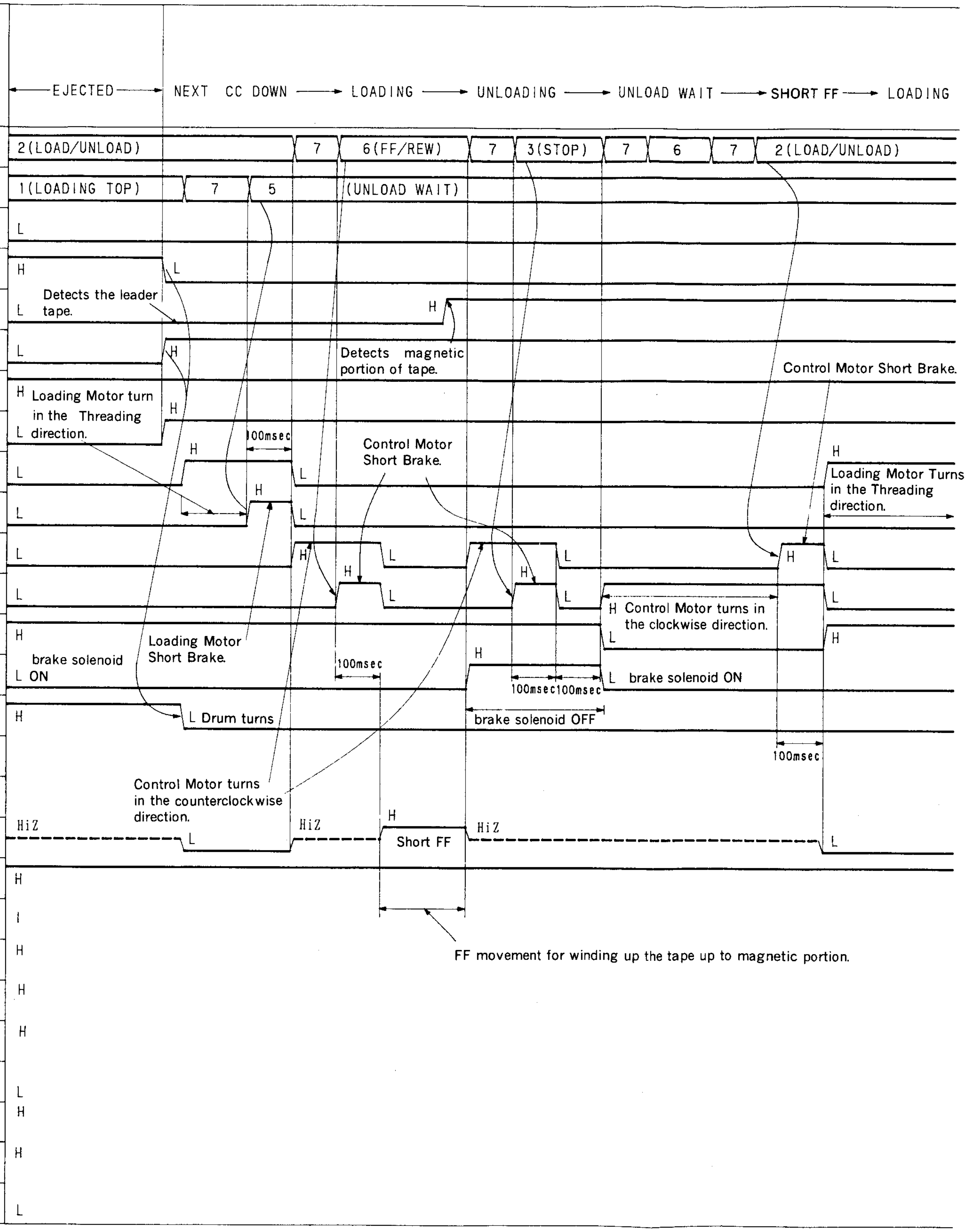
* 2 Loading Motor pulse driving in the LOADING END.


20msec
40msec
LOADING (IC003-6)

Drives for fifteen pulse since it becomes LOADING END position.

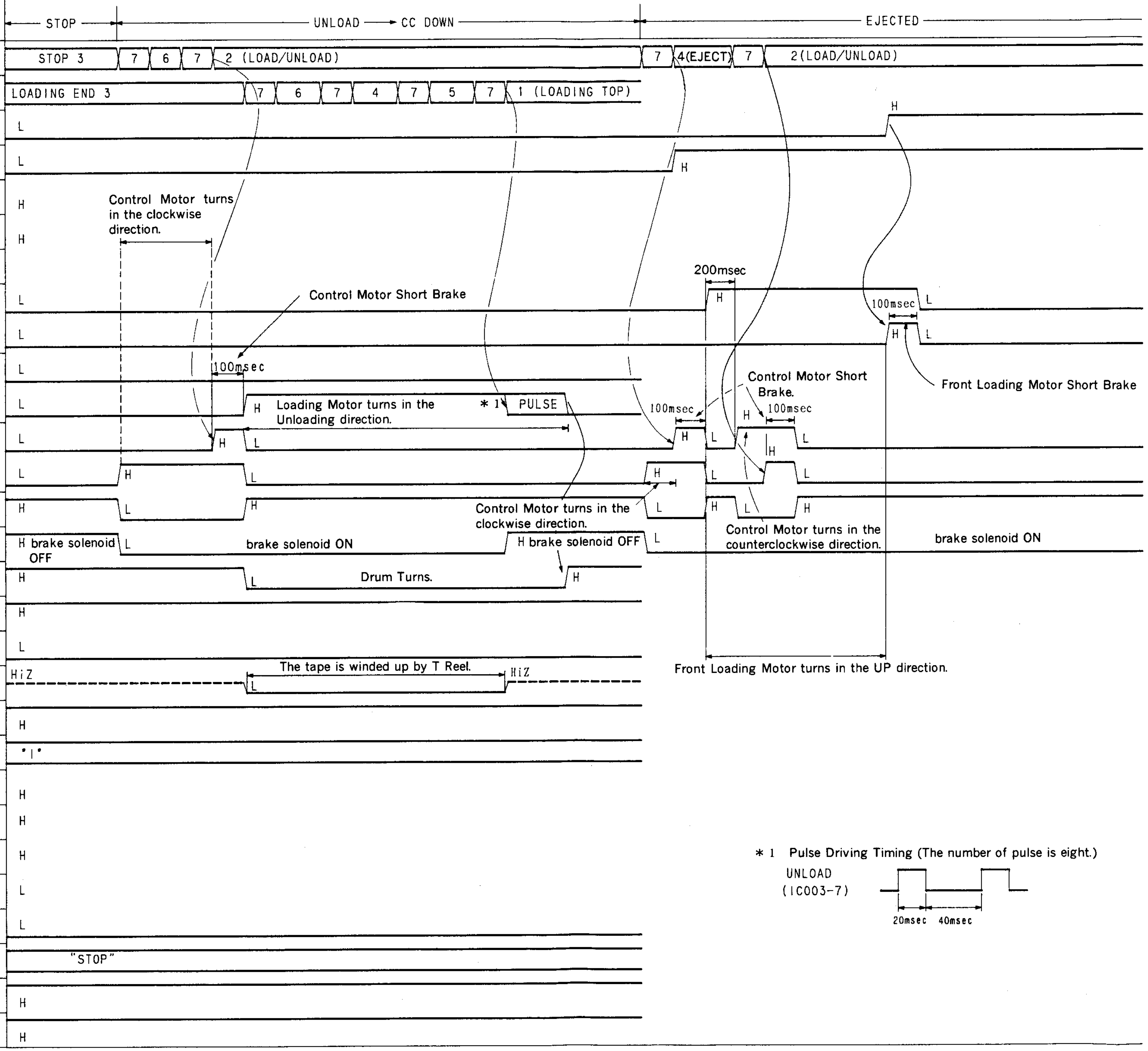
2. EJECTED → CC DOWN → LOADING → UNLOADING → UNLOAD WAIT → SHORT FF → LOADING

SIGNAL	L	H	MEASURING POINT SE-10 BOARD (PIN NO)
MODE SW A,B,C	※1		IC003-12,13,14
LOADING SW A,B,C	※2		IC003-16,17,18
CASSETTE IN	ON	OFF	IC003-46
CASSETTE DOWN	ON	OFF	IC003-47
TAPE TOP	ON	OFF	IC003-54
TAPE END	ON	OFF	IC003-55
CASECON UP	※3		IC003-8
CASECON DOWN			IC003-9
LOADING	※4		IC003-6
UNLOADING			IC003-7
CONTROL R	※5		IC003-20
CONTROL L			IC003-21
START	ON	OFF	IC003-22
HOLD	ON	OFF	IC003-23
DRUM ON	ON	OFF	IC002-8
CAPSTAN ON	ON	OFF	IC002-4
CAPSTAN FWD/RVS	FWD	RVS	IC002-5
REEL FWD/RVS	FWD	RVS	IC002-60
REEL BRAKE	ON	OFF	IC002-62
CAPSTAN SPEED	——		IC002-16to20
CUE	CUE	STOP	IC002-51
REV	REV	STOP	IC002-52
SLOW	NOT SLOW	SLOW	IC002-22
AUTO (HEAD SWITCHING)	obey MPU	obey RF	IC002-38
RP PB MODE	REC	PB EE(STOP)	IC002-44
FLYING ERASE ON	ON	OFF	IC002-29
JOG	NORMAL PB	Variable Speed playback	IC002-9


EJECTED
NEXT CC DOWN → LOADING → UNLOADING → UNLOAD WAIT → SHORT FF → LOADING
2(LOAD/UNLOAD)
7
6(FF/REW)
7
3(STOP)
7
6
7
2(LOAD/UNLOAD)
1(LOADING TOP)
7
5
(UNLOAD WAIT)
L
H
L
Detects the leader tape.
H
L
H
Detects magnetic portion of tape.
Control Motor Short Brake.
H Loading Motor turn in the Threading direction.
L
H
100msec
H
L
Control Motor Short Brake.
H
Loading Motor Turns in the Threading direction.
L
H
L
L
H
L
L
H
L
H
L
L
H
L
H
L
H Control Motor turns in the clockwise direction.
L
L
H
brake solenoid
L ON
Loading Motor Short Brake.
100msec
H
100msec
100msec
L brake solenoid ON
H
L Drum turns
brake solenoid OFF
100msec
Control Motor turns in the counterclockwise direction.
HiZ
L
HiZ
H
Short FF
HiZ
L
H
I
H
H
H
L
H
H
L
FF movement for winding up the tape up to magnetic portion.

3. STOP → UNLOAD → CC DOWN → EJECTED

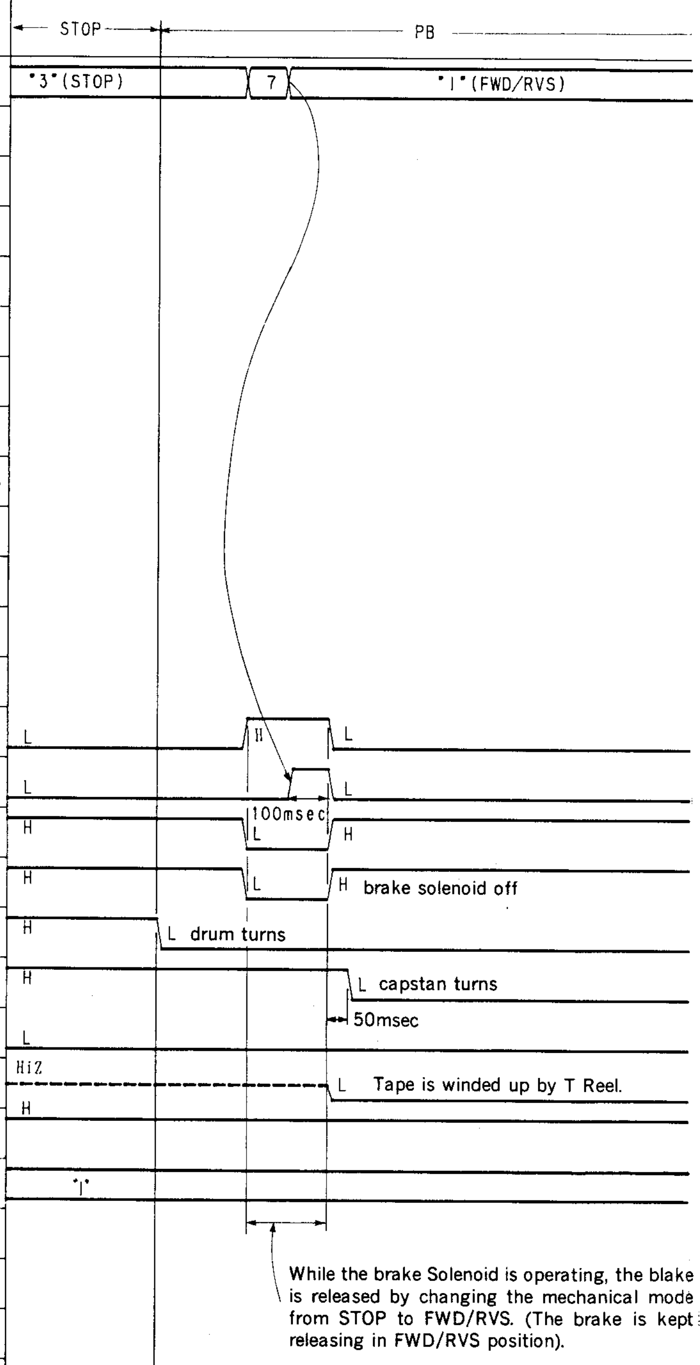
SIGNAL	L	H	MEASURING POINT SE-10 BOARD (PIN NO)
MODE SW A,B,C	※1		IC003-12,13,14
LOADING SW A,B,C	※2		IC003-16,17,18
CASSETTE IN	ON	OFF	IC003-46
CASSETTE DOWN	ON	OFF	IC003-47
TAPE TOP	ON	OFF	IC003-54
TAPE END	ON	OFF	IC003-55
DRM ROT	ON	OFF	IC003-61, 62, 63
CASECON UP	※3		IC003-8
CASECON DOWN			IC003-9
LOADING	※4		IC003-6
UNLOADING			IC003-7
CONTROL R	※5		IC003-20
CONTROL L			IC003-21
START	ON	OFF	IC003-22
HOLD	ON	OFF	IC003-23
DRUM ON	ON	OFF	IC002-8
CAPSTAN ON	ON	OFF	IC002-4
CAPSTAN $\overline{\text{FWD}}$/RVS	FWD	RVS	IC002-5
REEL $\overline{\text{FWD}}$/RVS	ON	OFF	IC002-60
REEL BRAKE	ON	OFF	IC002-62
CAPSTAN SPEED	———		IC002-16to20
CUE	CUE	STOP	IC002-51
REV	REV	STOP	IC002-52
SLOW	NOT SLOW	SLOW	IC002-22
AUTO (HEAD SWITCHING)	obey MPU	obey RF	IC002-38
ATF CS (MPU COMMUNICATION)	COMMUNICATION OK	STOP	IC002-43
RP PB MODE	REC	PB EE(STOP)	IC002-44
FLYING ERASE ON	ON	OFF	IC002-29
JOG	NORMAL PB	Variable speed playback	IC002-9


STOP
UNLOAD ——→ CC DOWN
EJECTED
STOP 3
7
6
7
2 (LOAD/UNLOAD)
7
4(EJECT)
7
2(LOAD/UNLOAD)
LOADING END 3
7
6
7
4
7
5
7
1 (LOADING TOP)
L
H
Control Motor turns in the clockwise direction.
200msec
Control Motor Short Brake
100msec
Loading Motor turns in the Unloading direction.
* 1
PULSE
100msec
Control Motor Short Brake.
100msec
Front Loading Motor Short Brake
Control Motor turns in the clockwise direction.
Control Motor turns in the counterclockwise direction.
H brake solenoid OFF
brake solenoid ON
H brake solenoid OFF
brake solenoid ON
Drum Turns.
The tape is winded up by T Reel.
HiZ
HiZ
Front Loading Motor turns in the UP direction.
"I"
"STOP"
UNLOAD
(IC003-7)
20msec
40msec

* 1 Pulse Driving Timing (The number of pulse is eight.)

4. STOP → PB

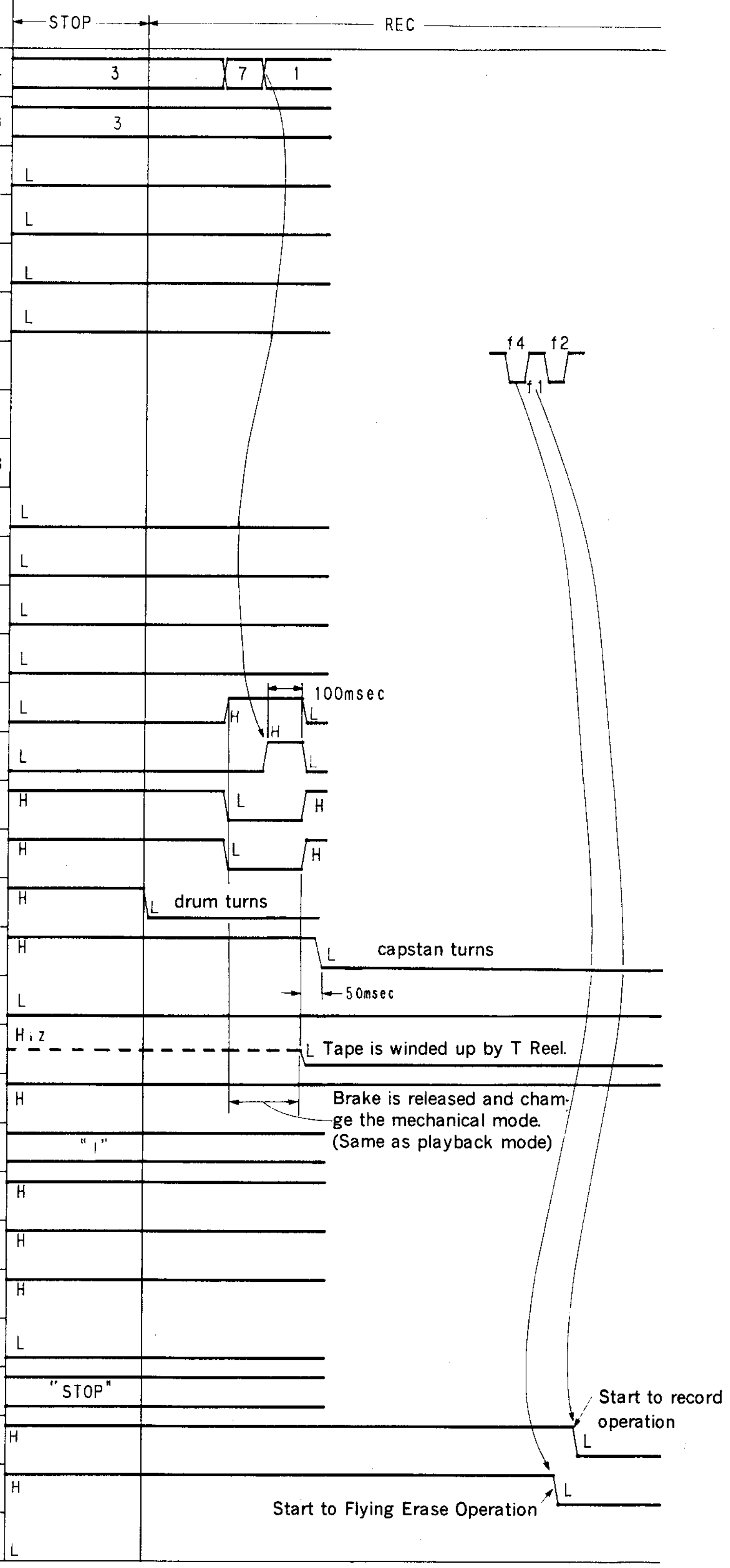
SIGNAL	L	H	MEASURING POINT SE-10 BOARD (PIN NO)
MODE SW A,B,C	※1		IC003-12,13,14
LOADING SW A,B,C	※2		IC003-16,17,18
CASSETTE IN	ON	OFF	IC003-46
CASSETTE DOWN	ON	OFF	IC003-47
TAPE TOP	ON	OFF	IC003-54
TAPE END	ON	OFF	IC003-55
RF SW PULSE			IC002-48,49 IC003-48,49
CAPSTAN FG			IC002-40
DRM ROT	ON	OFF	IC003-61, 62, 63
CASECON UP	※3		IC003-8
CASECON DOWN			IC003-9
LOADING	※4		IC003-6
UNLOADING			IC003-7
CONTROL R	※5		IC003-20
CONTROL L			IC003-21
START	ON	OFF	IC003-22
HOLD	ON	OFF	IC003-23
DRUM ON	ON	OFF	IC002-8
CAPSTAN ON	ON	OFF	IC002-4
CAPSTAN $\overline{\text{FWD}}$/RVS	FWD	RVS	IC002-5
REEL $\overline{\text{FWD}}$/RVS	FWD	RVS	IC002-60
REEL BRAKE	ON	OFF	IC002-62
CAPSTAN SPEED	———		IC002-16to20
CUE	CUE	STOP	IC002-51
REV	REV	STOP	IC002-52
SLOW	NOT SLOW	SLOW	IC002-22
AUTO (HEAD SWITCHING)	obey MPU	obey RF	IC002-38
ATF CS (MPU COMMUNICATION)	COMMUNICATION OK	STOP	IC002-43
RP PB MODE	REC	PB EE(STOP)	IC002-44
FLYING ERASE ON	ON	OFF	IC002-29
JOG	NORMAL PB	Variable speed playback	IC002-9



While the brake Solenoid is operating, the blake is released by changing the mechanical mode from STOP to FWD/RVS. (The brake is kept releasing in FWD/RVS position).

5. STOP → REC

SIGNAL	L	H	MEASURING POINT SE-10 BOARD (PIN NO)
MODE SW A,B,C	※1		IC003-12,13,14
LOADING SW A,B,C	※2		IC003-16,17,18
CASSETTE IN	ON	OFF	IC003-46
CASSETTE DOWN	ON	OFF	IC003-47
TAPE TOP	ON	OFF	IC003-54
TAPE END	ON	OFF	IC003-55
RF SW PULSE			IC002-48,49 IC003-48,49
CAPSTAN FG			IC002-40
DRM ROT	ON	OFF	IC003-61, 62, 63
CASECON UP	※3		IC003-8
CASECON DOWN			IC003-9
LOADING	※4		IC003-6
UNLOADING			IC003-7
CONTROL R	※5		IC003-20
CONTROL L			IC003-21
START	ON	OFF	IC003-22
HOLD	ON	OFF	IC003-23
DRUM ON	ON	OFF	IC002-8
CAPSTAN ON	ON	OFF	IC002-4
CAPSTAN $\overline{\text{FWD}}$/RVS	FWD	RVS	IC002-5
REEL $\overline{\text{FWD}}$/RVS	FWD	RVS	IC002-60
REEL BRAKE	ON	OFF	IC002-62
CAPSTAN SPEED	———		IC002-16to20
CUE	CUE	STOP	IC002-51
REV	REV	STOP	IC002-52
SLOW	NOT SLOW	SLOW	IC002-22
AUTO (HEAD SWITCHING)	obey MPU	obey RF	IC002-38
ATF CS (MPU COMMUNICATION)	COMMUNICATION OK	STOP	IC002-43
RP PB MODE	REC	PB EE(STOP)	IC002-44
FLYING ERASE ON	ON	OFF	IC002-29
JOG	NORMAL PB	Variable speed playback	IC002-9



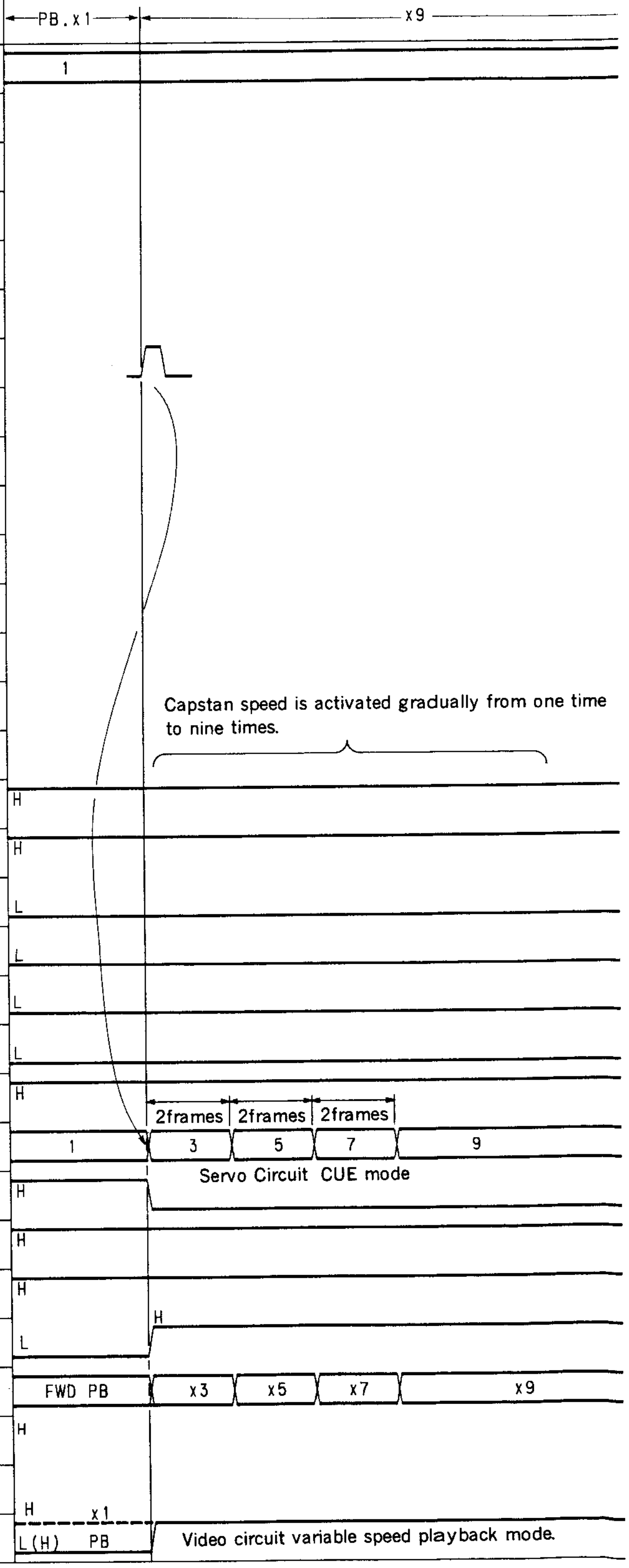
Brake is released and change the mechanical mode. (Same as playback mode)

Start to record operation

Start to Flying Erase Operation

6. PB, X1 → X9

SIGNAL	L	H	MEASURING POINT SE-10 BOARD (PIN NO)
MODE SW A,B,C	※1		IC003-12,13,14
LOADING SW A,B,C	※2		IC003-16,17,18
CASSETTE IN	ON	OFF	IC003-46
CASSETTE DOWN	ON	OFF	IC003-47
TAPE TOP	ON	OFF	IC003-54
TAPE END	ON	OFF	IC003-55
RF SW PULSE			IC002-48,49 IC003-48,49
CAPSTAN FG			IC002-40
DRM ROT	ON	OFF	IC003-61, 62, 63
CASECON UP	※3		IC003-8
CASECON DOWN			IC003-9
LOADING	※4		IC003-6
UNLOADING			IC003-7
CONTROL R	※5		IC003-20
CONTROL L			IC003-21
START	ON	OFF	IC003-22
HOLD	ON	OFF	IC003-23
DRUM ON	ON	OFF	IC002-8
CAPSTAN ON	ON	OFF	IC002-4
CAPSTAN $\overline{\text{FWD}}$/RVS	FWD	RVS	IC002-5
REEL $\overline{\text{FWD}}$/RVS	FWD	RVS	IC002-60
$\overline{\text{REEL BRAKE}}$	ON	OFF	IC002-62
CAPSTAN SPEED	———		IC002-16to20
CUE	CUE	STOP	IC002-51
REV	REV	STOP	IC002-52
SLOW	NOT SLOW	SLOW	IC002-22
AUTO (HEAD SWITCHING)	obey MPU	obey RF	IC002-38
ATF CS (MPU COMMUNICATION)	COMMUNICATION OK	STOP	IC002-43
RP PB MODE	REC	PB EE(STOP)	IC002-44
FLYING ERASE ON	ON	OFF	IC002-29
JOG	NORMAL PB	Variable speed playbock	IC002-9



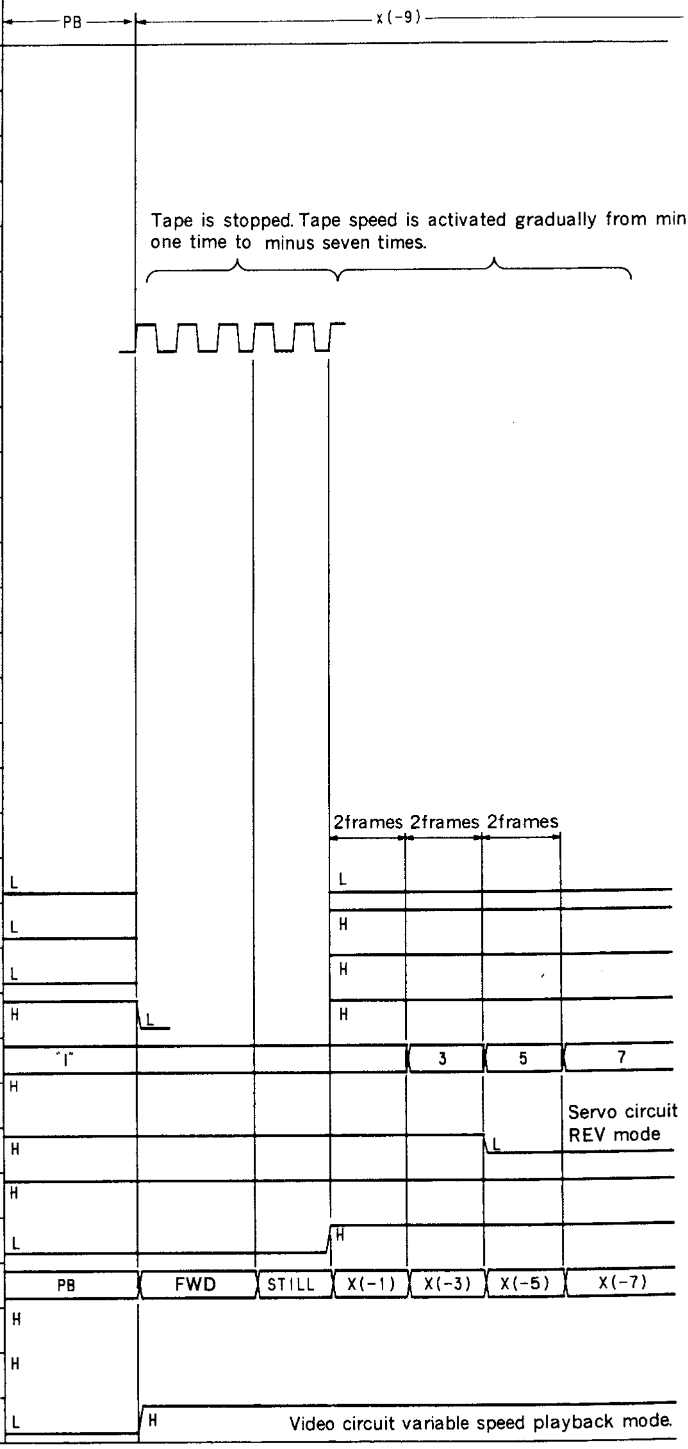
Capstan speed is activated gradually from one time to nine times.

Servo Circuit CUE mode

Video circuit variable speed playback mode.

7. PB → X (−9)

SIGNAL	L	H	MEASURING POINT SE-10 BOARD (PIN NO)
MODE SW A,B,C	※1		IC003-12,13,14
LOADING SW A,B,C	※2		IC003-16,17,18
CASSETTE IN	ON	OFF	IC003-46
CASSETTE DOWN	ON	OFF	IC003-47
TAPE TOP	ON	OFF	IC003-54
TAPE END	ON	OFF	IC003-55
RF SW PULSE			IC002-48,49 IC003-48,49
CAPSTAN FG			IC002-40
DRM ROT	ON	OFF	IC003-61, 62, 63
CASECON UP	※3		IC003-8
CASECON DOWN			IC003-9
LOADING	※4		IC003-6
UNLOADING			IC003-7
CONTROL R	※5		IC003-20
CONTROL L			IC003-21
START	ON	OFF	IC003-22
HOLD	ON	OFF	IC003-23
DRUM ON	ON	OFF	IC002-8
CAPSTAN ON	ON	OFF	IC002-4
CAPSTAN $\overline{\text{FWD}}$/RVS	FWD	RVS	IC002-5
REEL $\overline{\text{FWD}}$/RVS	FWD	RVS	IC002-60
REEL BRAKE	ON	OFF	IC002-62
CAPSTAN SPEED	——		IC002-16to20
CUE	CUE	STOP	IC002-51
REV	REV	STOP	IC002-52
SLOW	NOT SLOW	SLOW	IC002-22
AUTO (HEAD SWITCHING)	obey MPU	obey RF	IC002-38
ATF CS (MPU COMMUNICATION)	COMMUNICATION OK	STOP	IC002-43
RP PB MODE	REC	PB EE(STOP)	IC002-44
FLYING ERASE ON	ON	OFF	IC002-29
JOG	NORMAL PB	Variable speed playback	IC002-9



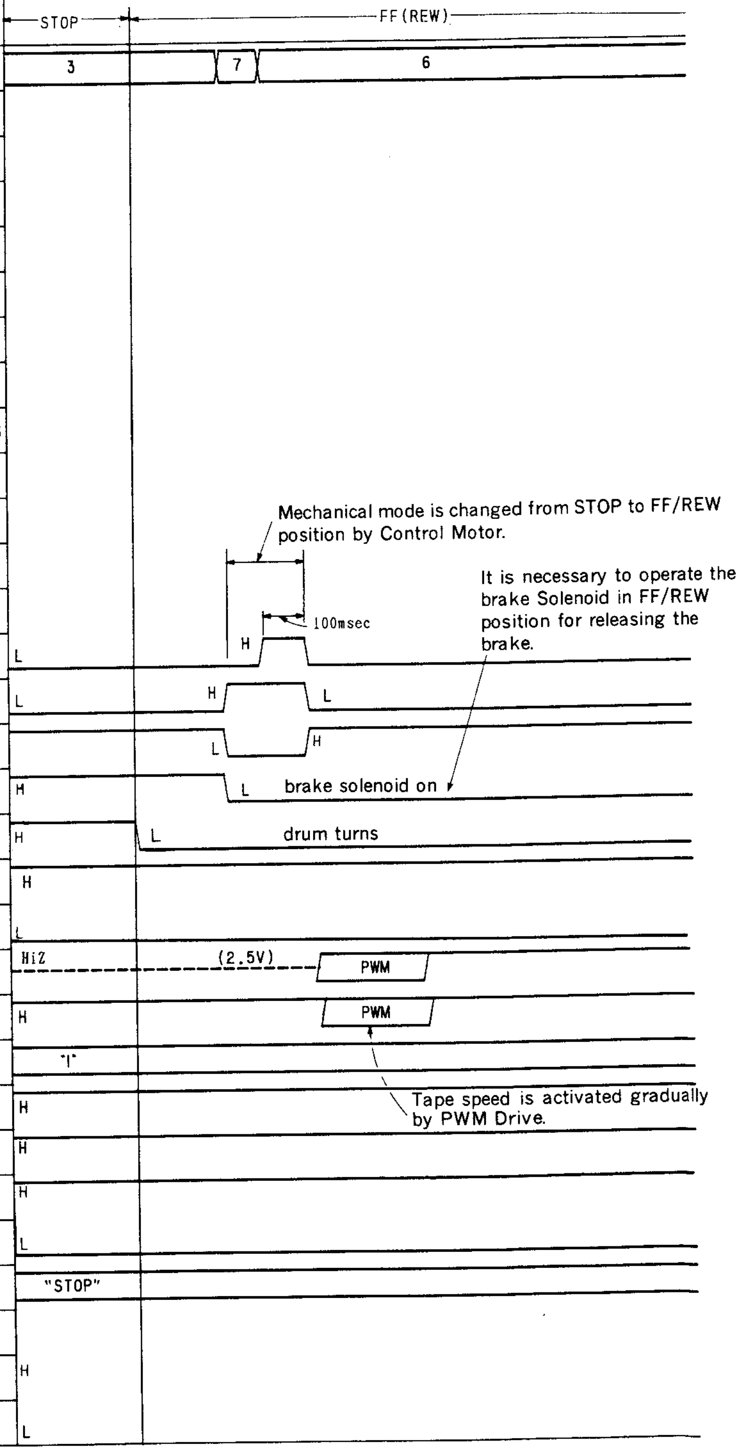
Tape is stopped. Tape speed is activated gradually from minus one time to minus seven times.

Servo circuit REV mode

Video circuit variable speed playback mode.

8. STOP → FF (REW)

SIGNAL	L	H	MEASURING POINT SE-10 BOARD (PIN NO)
MODE SW A,B,C	※1		IC003-12,13,14
LOADING SW A,B,C	※2		IC003-16,17,18
CASSETTE IN	ON	OFF	IC003-46
CASSETTE DOWN	ON	OFF	IC003-42,47
TAPE TOP	ON	OFF	IC003-54
TAPE END	ON	OFF	IC003-55
RF SW PULSE			IC002-48,49 IC003-48,49
CAPSTAN FG			IC002-40
DRM ROT	ON	OFF	IC003-61, 62, 63
CASECON UP	※3		IC003-8
CASECON DOWN			IC003-9
LOADING	※4		IC003-6
UNLOADING			IC003-7
CONTROL R	※5		IC003-20
CONTROL L			IC003-21
START	ON	OFF	IC003-22
HOLD	ON	OFF	IC003-23
DRUM ON	ON	OFF	IC002-8
CAPSTAN ON	ON	OFF	IC002-4
CAPSTAN $\overline{\text{FWD}}$/RVS	FWD	RVS	IC002-5
REEL $\overline{\text{FWD}}$/RVS	FWD	RVS	IC002-60
REEL BRAKE	ON	OFF	IC002-62
CAPSTAN SPEED	※6		IC002-16to20
CUE	CUE	REV	IC002-51
REV	REV	STOP	IC002-52
SLOW	NOT SLOW	SLOW	IC002-22
AUTO (HEAD SWITCHING)	obey MPU	obey RF	IC002-38
ATF CS (MPU COMMUNICATION)	COMMUNICATION OK	STOP	IC002-43
RP PB MODE	REC	PB EE(STOP)	IC002-44
FLYING ERASE ON	ON	OFF	IC002-29
JOG	NORMAL PB	Variable speed playback	IC002-9



Mechanical mode is changed from STOP to FF/REW position by Control Motor.

It is necessary to operate the brake Solenoid in FF/REW position for releasing the brake.

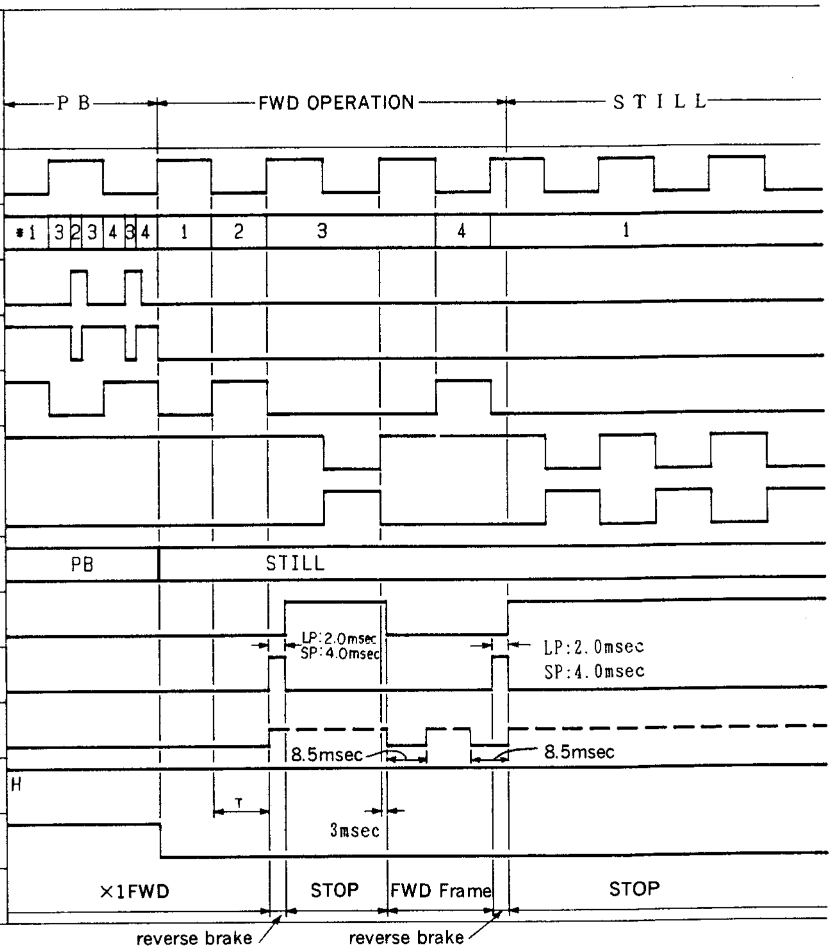
brake solenoid on

drum turns

Tape speed is activated gradually by PWM Drive.

9. PB → STILL

SIGNAL	L	H	MEASURING POINT SE-10 BOARD (PIN NO)
RF SW PULSE	—		IC003-48, 49
REF PILOT	※1		—
TSA	SAMPL-ING	HOLD	IC003-4
TSB	SAMPL-ING	HOLD	IC003-5
SEL16	16kHz	47kHz	IC003-2
H CHG	H;SP HEAD L;LP HEAD		IC003-3
SERVO DATA	—		IC003-60
CAPSTAN ON	ON	OFF	IC002-4
CAP FWD/RVS	FWD	RVS	IC002-5
REEL FWD/RVS	FWD	RVS	IC002-60
REEL BRAKE	BRAKE	OFF	IC002-62
PB PAUSE	PB PAUSE	NOT PB PAUSE	IC002-23
CAPSTAN OPERATION			


PB
FWD OPERATION
STILL
∗1 3 2 3 4 3 4
1 2 3 4 1
PB
STILL
LP:2.0msec
SP:4.0msec
LP:2.0msec
SP:4.0msec
8.5msec
8.5msec
H
T
3msec
×1FWD
STOP
FWD Frame
STOP
reverse brake
reverse brake

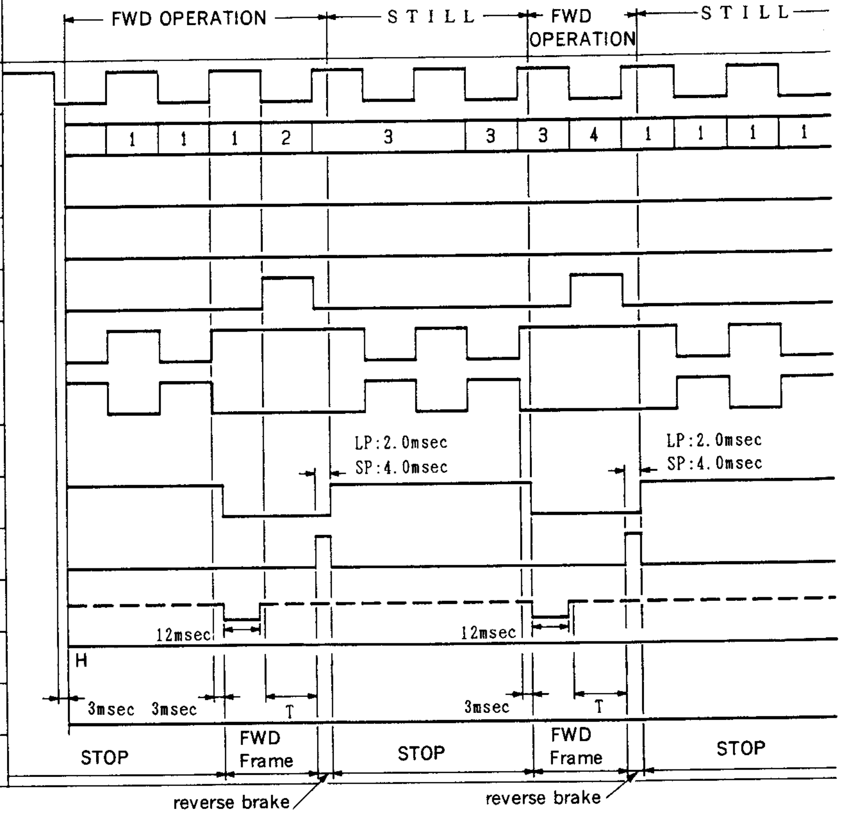
(∗1) Selects the REF PILOT Frequency by SEL1 (IC003-(64)) and SEL2 (IC003-②).

T=5.0−21.0msec
Center 13.0msec

FREQUENCY	SEL1	SEL2
1	H	H
2	L	H
3	H	L
4	L	L

10. FWD SLOW or FWD FRAME

SIGNAL	L	H	MEASURING POINT SE-10 BOARD (PIN NO)
RF SW PULSE	—		IC003-48, 49
REF PILOT	※1		—
TSA	SAMPL-ING	HOLD	IC003-4
TSB	SAMPL-ING	HOLD	IC003-5
SEL16	16kHz	47kHz	IC003-2
H CHG	H:SP HEAD		IC003-3
	L:LP HEAD		
SERVO DATA	—		IC003-60
CAPSTAN ON	ON	OFF	IC002-4
CAP FWD/RVS	FWD	RVS	IC002-5
REEL FWD/RVS	FWD	RVS	IC002-60
REEL BRAKE	BRAKE	OFF	IC002-62
PB PAUSE	PB PAUSE	NOT PB PAUSE	IC002-23
CAPSTAN OPERATION			

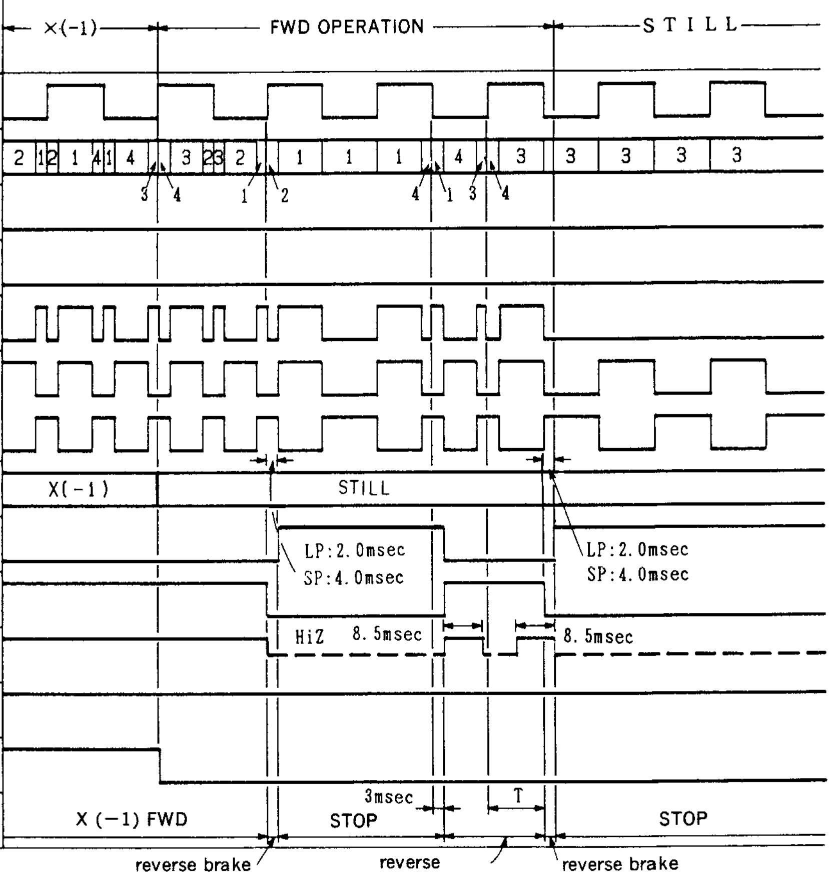

FWD OPERATION
STILL
FWD OPERATION
STILL
1
1
1
2
3
3
3
4
1
1
1
1
LP:2.0msec
SP:4.0msec
LP:2.0msec
SP:4.0msec
12msec
12msec
H
3msec
3msec
T
3msec
T
STOP
FWD Frame
STOP
FWD Frame
STOP
reverse brake
reverse brake
FWD operation
T=8.5−24.5msec
Center 16.5msec

(＊ 1) Selects the REF PILOT Frequency by SEL1 (IC003-64) and SEL2 (IC003-②).

FREQUENCY	SEL1	SEL2
1	H	H
2	L	L
3	H	L
4	L	L

11. X (−1) → STILL

SIGNAL	L	H	MEASURING POINT SE-10 BOARD (PIN NO)
RF SW PULSE	——		IC003-48, 49
REF PILOT	※1		——
TSA	SAMPL-ING	HOLD	IC003-4
TSB	SAMPL-ING	HOLD	IC003-5
SEL16	16kHz	47kHz	IC003-2
H CHG	H;SP HEAD		IC003-3
	L;LP HEAD		
SERVO DATA	——		IC003-60
CAPSTAN ON	ON	OFF	IC002-4
CAP FWD/RVS	FWD	RVS	IC002-5
REEL FWD/RVS	FWD	RVS	IC002-60
REEL BRAKE	BRAKE	OFF	IC002-62
PB PAUSE	PB PAUSE	NOT PB PAUSE	IC002-23
CAPSTAN OPERATION			

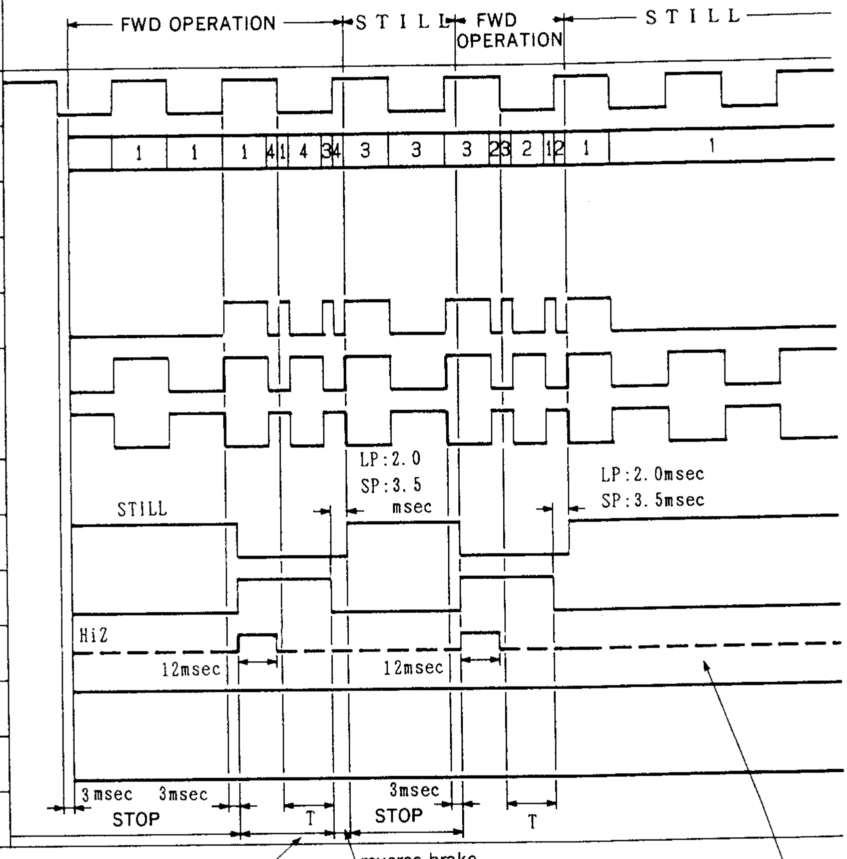

x(−1)
FWD OPERATION
S T I L L
2 1 2 1 4 1 4 3 2 3 2 1 1 1 4 3 3 3 3 3
3 4 1 2 4 1 3 4
X(−1)
STILL
LP:2.0msec
SP:4.0msec
LP:2.0msec
SP:4.0msec
HiZ
8.5msec
8.5msec
3msec
T
X (−1) FWD
STOP
STOP
reverse brake
reverse FWD Frame
reverse brake
T=5.0−21.0msec
Center 13.0msec

(✻ 1) Selects the REF PILOT Frequency by SEL1 (IC003-(64)) and SEL2 (IC003-②).

FREQUENCY	SEL1	SEL2
1	H	H
2	L	L
3	H	L
4	L	L

12. RVS SLOW or RVS FRAME

SIGNAL	L	H	MEASURING POINT SE-10 BOARD (PIN NO)
RF SW PULSE	——		IC003-48, 49
REF PILOT	※1		——
TSA	SAMPL-ING	HOLD	IC003-4
TSB	SAMPL-ING	HOLD	IC003-5
SEL16	16kHz	47kHz	IC003-2
H CHG	H;SP HEAD		IC003-3
	L;LP HEAD		
SERVO DATA	——		IC003-60
CAPSTAN ON	ON	OFF	IC002-4
CAP FWD/RVS	FWD	RVS	IC002-5
REEL FWD/RVS	FWD	RVS	IC002-60
REEL BRAKE	BRAKE	OFF	IC002-62
PB PAUSE	PB PAUSE	NOT PB PAUSE	IC002-23
CAPSTAN OPERATION			


FWD OPERATION
STILL
FWD OPERATION
STILL
1 1 1 4 1 4 3 4 3 3 3 2 3 2 1 2 1 1
LP:2.0 SP:3.5 msec
LP:2.0msec SP:3.5msec
STILL
HiZ
12msec
12msec
3msec 3msec STOP
T
3msec STOP
T

reverse FWD Frame

reverse brake

Reel control becomes dotted line when STILL/PB PAUSE → RVS SLOW/FRAME.
T=8.5−24.5msec
Center 16.5msec

(∗ 1) Selects the REF PILOT Frequency by SEL1 (IC003-(64)) and SEL2 (IC003-②).

FREQUENCY	SEL1	SEL2
1	H	H
2	L	L
3	H	L
4	L	L

SECTION 3
PERIODIC CHECK AND MAINTENANCE

It is recommended that you carry out the following periodic check and maintenance in order to obtain maintain performance and ensure a long life for the unit and tape.

3-1. MAINTENANCE AFTER REPAIR

Carry out the following maintenance after repair without regard to the operating hours of the unit.

(1) Cleaning Rotary Upper Drum

- Press a cleaning cloth moistend with cleaning fluid lightly against Rotary Upper Drum and turn the Rotary Upper Drum slowly counterclockwise by means of a hand.

  Note: Never turn the Drum by means of a hand if the unit is switched and never turn it clockwise by means of a hand. If cleaning the head chip, never move the cleaning cloth in vertical direction. You could easily damage the head chip.

(2) Cleaning Tape Running System (Fig.1)

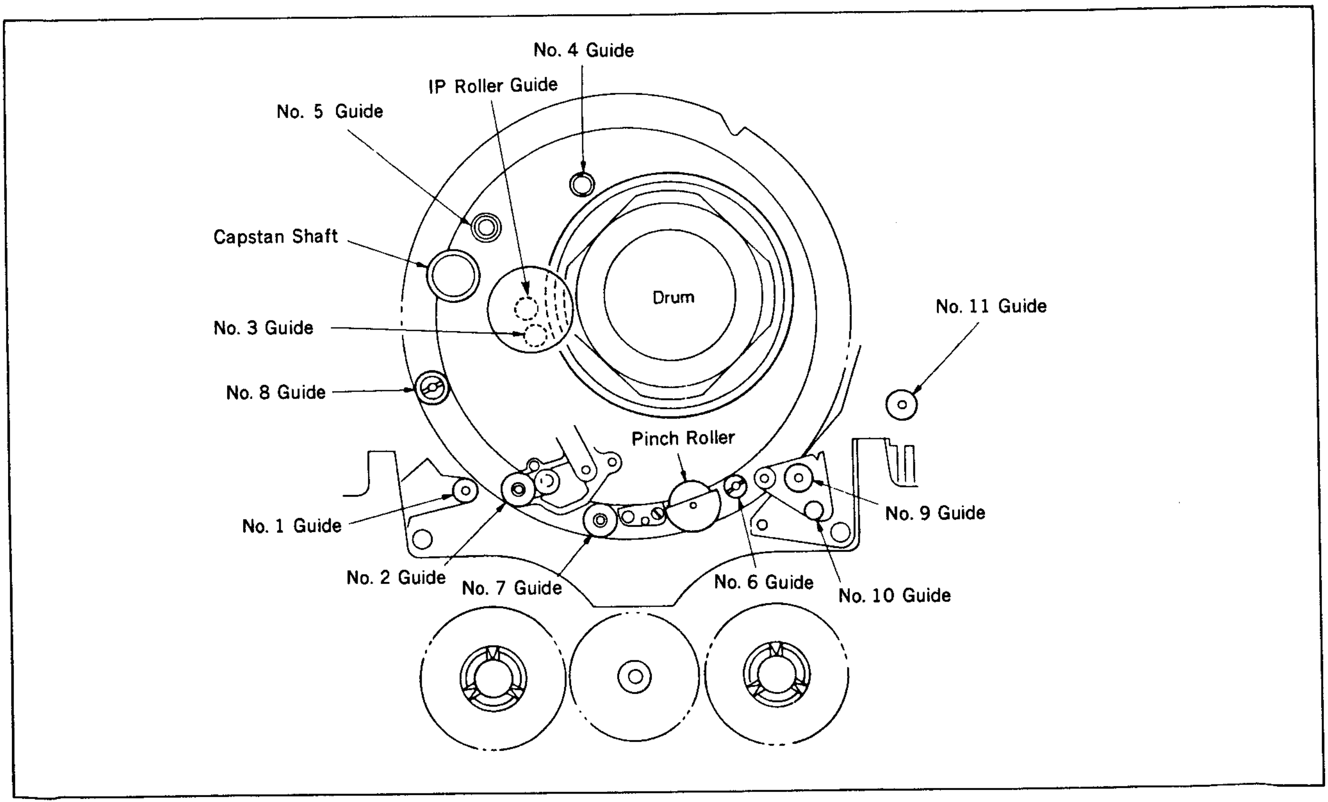
- Select the Cassette-up Compartment Assembly into the EJECT mode. Clean tape path system No.1 through No.11 Guides, Capstan Shaft, Pinch Rolloer and IP Roller Guide by means of the cleaning cloth with the clearning fluid.

(3) Cleaning Drive System

- Clean Drive system Reel Table surface, belt and Timing Belt by means of the cleaning piece moistend with cleaning fluid.

3-2. PERIODIC CHECK

Carry out periodic check and maintenance according to operational hours of the unit.


No. 4 Guide
IP Roller Guide
No. 5 Guide
Capstan Shaft
Drum
No. 3 Guide
No. 11 Guide
No. 8 Guide
Pinch Roller
No. 9 Guide
No. 1 Guide
No. 2 Guide
No. 7 Guide
No. 6 Guide
No. 10 Guide

3-3. HOURS METER

The Time Counter on the Front Panel can display the total rotation time of the Upper Drum Assembly. How to select Time Counter Display into the Hours Meter is refers to Section 2-16. The Hours Meter has two display modes as follows.

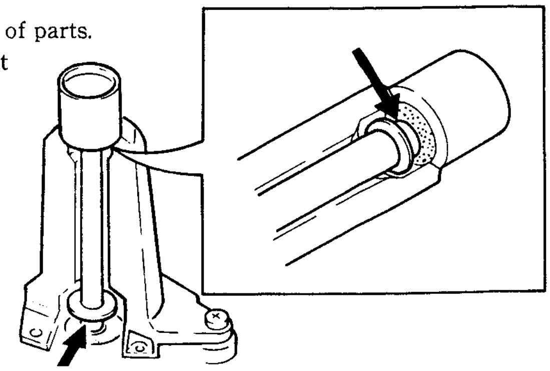
MENU No.205: HOURS METER (DRUM)
Hours of Upper Drum Assembly Rotation
MENU NO.206: HOURS METER
POWER-ON Time

The periodic checks and maintenance use MENU No.205. Refer to periodic check list.

○ : Cleaning ◆ : Replacement ◇ : Checking ■ : Oiling

Location			Hours of Use (H) : Drum rotation										Reference Section
	Parts Name	Parts No.	500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	
Tape Path	Tape Path surface	———	○	○	○	○	○	○	○	○	○	○	3-1
	Upper Drum Ass'y (DGR-35B-R)	A-7049-351-A	○	◆	○	◆	○	–	○	◆	○	◆	4-2
	Drum Ass'y (DGH-35B-R)	A-7048-417-A	○	○	○	○	○	◆	○	○	○	○	4-3
	Pinch Roller Arm Ass'y	X-3686-648-1	○	◆	○	◆	○	◆	○	◆	○	◆	4-5
	(Note 4 :) Capstan motor	8-835-364-01	–	■	–	■	–	◆	–	■	–	■	4-6
Drive System	Threading motor belt	3-686-546-01	◇	◇	◇	◆	◇	◇	◇	◆	◇	◇	4-7
	Blake plunger	1-454-377-31	–	–	–	○	–	–	–	○	–	–	4-20
	Threading motor	A-7040-065-A	–	–	–	–	–	◆	–	–	–	–	4-7
	M-switch Ass'y	A-7040-159-A	–	–	–	–	–	◆	–	–	–	–	4-21
	Reel motor	8-835-304-11	–	–	–	–	–	◆	–	–	–	–	4-8
	T Reel Table Ass'y	X-3711-998-1	–	–	–	–	–	◆	–	–	–	–	4-14
	S Reel Table Ass'y	X-3713-427-1	–	–	–	–	–	◆	–	–	–	–	4-13
	T•Main Brake Ass'y	X-3686-574-1	–	–	–	◆	–	–	–	◆	–	–	4-22
	S•Main Brake Ass'y	X-3711-991-1	–	–	–	◆	–	–	–	◆	–	–	4-22
	T•Soft Brake Ass'y	X-3711-987-2	–	–	–	◆	–	–	–	◆	–	–	——
	REW Brake Ass'y	X-3711-993-1	–	–	–	◆	–	–	–	◆	–	–	——
	Tension Regulator Band Ass'y	X-3686-531-1	–	–	–	◆	–	–	–	◆	–	–	4-17
	Roller (Cassette-up Compartment)	3-713-466-01	○	○	○	○	○	○	○	○	○	○	——
Performance Check	Abnormal-noise	—	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	——
	FWD Back tension measurement	—	–	◇	–	◇	–	◇	–	◇	–	◇	5-5
	Brake torque measurement	—	–	◇	–	◇	–	◇	–	◇	–	◇	5-1, 5-2, 5-3
	FWD, RVS torque measurement	—	–	◇	–	◇	–	◇	–	◇	–	◇	5-4

Note 1 : When overhauling the unit, refer to the items above for replacement of parts.
Note 2 : The time of parts replacement will differ with operating environment
Note 3 : Be sure to clean the tape path surface in repairing.
Note 4 : Oiling to the Capstan Shaft Bearing :
Remove the Capstan Motor from the Mechanical Deck and apply one-half drop of oil to the Capstan Shaft Bearing.
(Never apply oil to the tape path surface.)



3-4. HOW TO USE THE CLEANING TAPE

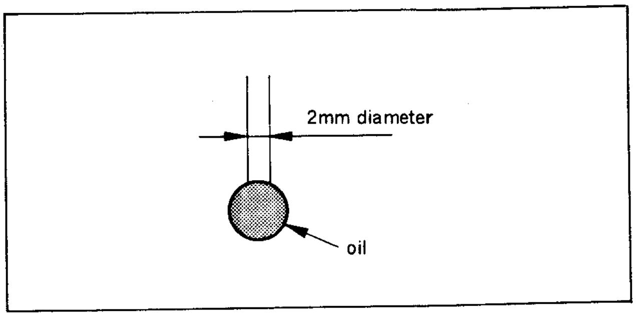
Cleaning Tape: V8-25CLH (supplied accessory)

. Do not use the cleaning tape, V8-25CLN.

(1) If the Rotary Head clogs and the head clogging can not be removed by means of cleaning the head, use the cleaning tape. Using the cleaning tape for any other reason will be shorten the life of the head.

(2) Use the cleaning tape for no longer than 15 seconds and never rewind after use. The cleaning tape can only be used once.

3-5. OTHERS



(1) Sony oil

. Be sure to use Sony oil. If any other make of oil is used, it is possible to cause trouble because it may not have the correct viscosity.

Sony oil: Part No. 7-661-018-18

. Use only clean Sony oil. If the oil is contaminated with dust or other particles, it is possible to cause bearings to seize or wear excessively.

. One drop of oil means the amount which sticks to a 2 mm diameter rod, as shown in the figure.

(2) Sony grease

. Be sure to use the Sony grease as the lubrication grease.

Sony grease: Part No. 7-662-001-62
(SGL-501)

(3) MOLYTONE GREASE

. Be sure to use MOLYTONE GREASE.

MOLYTONE GREASE: Part No. 7-662-001-41
(No. 320)

SECTION 4
REPLACEMENT OF MAJOR PARTS

PREPARATION FOR REPLACEMENT OF PART

In order to replace some parts you must use a Mode Selector. ☐ marked modes in the replacement procedure are set by pressing a button on the Mode Selector.

Mode Selector: J-6080-825-A

Operation of Mode selector

1. Location of part and control (Fig. 1)
2. Connection (Fig. 2)
   (1) Remove the Front Panel, Bottom Plate and Top Panel referring to Section 2-1.
   (2) Remove the Mechanical Deck Block referring to Section 2-2.
   (3) Remove the MB-19, MD-23, HK-4 and SE-10 Boards referring to Sections 2-5-5, 2-5-6 and 2-5-7.
   (4) Disconnect connectors (6P) on the MS-4 and LS-9 Boards.
   (5) Connect 6P connector (6 harness, white) for the M-switch of the Mode Selector to the MS-4 Board.
   (6) Connect 6P connector (4 harness, black) for the L-switch of the Mode Selector to the LS-9 Board.
   (7) Remove the cover of Threading Motor.
   (8) Connect the red clip of lead for the Threading Motor driver lead to the red terminal of the Threading Motor. Connect the black clip of lead for the Threading Motor driving to the brown terminal of the Threading Motor.

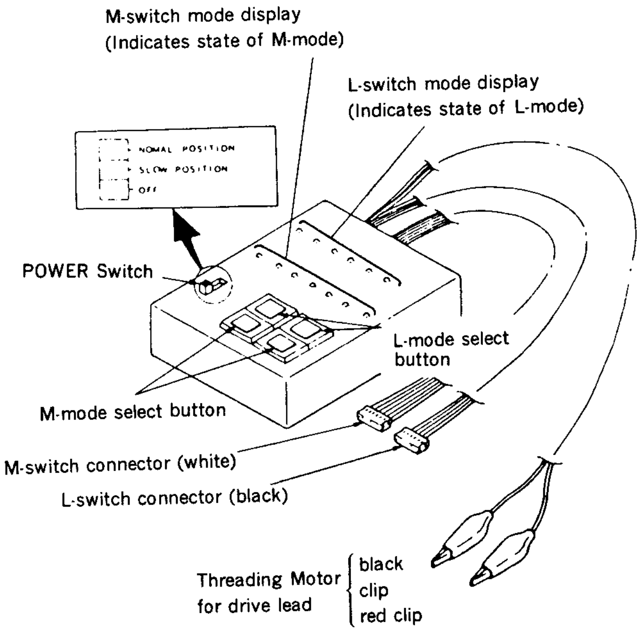

M-switch mode display
(Indicates state of M-mode)
L-switch mode display
(Indicates state of L-mode)
NOMAL POSITION
SLOW POSITION
OFF
POWER Switch
L-mode select button
M-mode select button
M-switch connector (white)
L-switch connector (black)
Threading Motor for drive lead
black clip
red clip

Fig. 1

3. Note

(1) If operating the L-switch, select the mode of the M-switch into the LOADING/ UNLOADING mode.

(2) If operating the M-switch, select the mode of L-switch into the LOADING TOP or LOADING END mode.

4. Operation

If the L-mode or M-mode does not select into each mode during mode selection, BLANK position lights up.

(1) L-mode

- If you press the right side of the L-mode select button continuously, the mode changes from LOADING TOP to LOADING END in that order.
- If you want to change the mode from LOADING END to LOADING TOP in that order, press the left side of the L-mode select button continuously.
- If selecting POWER switch into SLOW position, the L-mode is operated more slowly than NORMAL position.

(2) M-mode

- If carrying out EJECT, select the mode of the L-swtich into the LOADING TOP.
- If carrying out from FF/REW to RVS or from RVS to FF/REW, select the mode of the L-switch into the LOADING END.
- If you press the right side of the M-mode select button continuously, the mode changes from EJECT to RVS in that order.
- If you want to change the mode from RVS to EJECT ın that order, press the left side of the M-mode select button continuously.

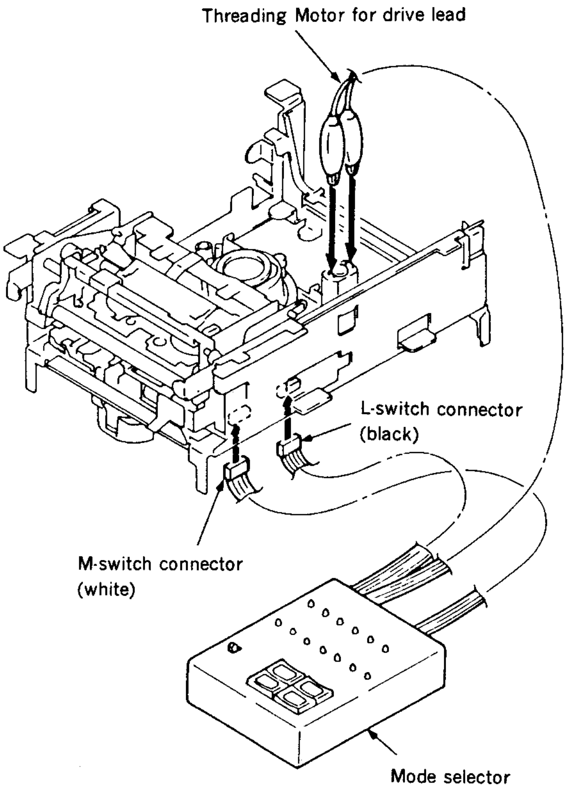


Fig. 2

4-1. REPLACEMENT OF FLY WHEEL

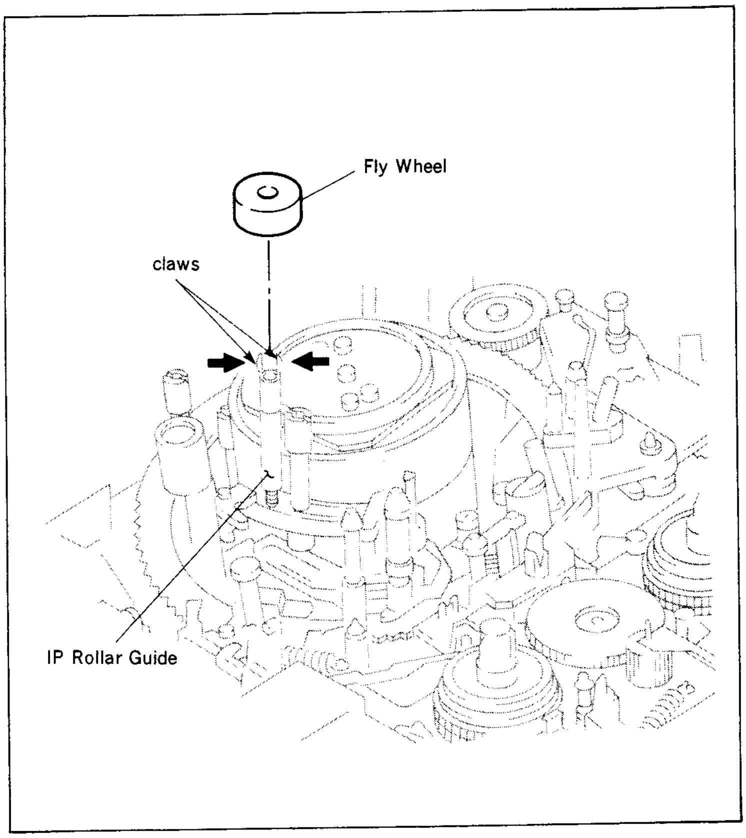
Removal:

(1) Open the MB-19 Board referring to Section 2-5-5.

(2) Remove Fly Wheel picking claws.

Installation:

(1) Replace the Fly Wheel with a new one. Put it into IP Rollar Guide from big hole side until click sound can be heard.


Fly Wheel
claws
IP Rollar Guide

4-2. REPLACEMENT OF ROTARY UPPER DRUM

- Video heads can not be replaced as a single parts. Replace the whole Rotary Upper Drum Assembly.
- There is a relay PC Board (DH-6 Board) for video and audio signals in the Rotary Upper Drum. It is not necessary to replace the DH-6 Board. If necessary, replace the whole Rotary Upper Drum Assembly.

Tool: Rotary Drum Tool (Ref No. J-11)
(supplied accessory for the Repair of the Rotary Upper Drum.)
L-shaped wrench
(1.5mm across flat)

Removal:

(1) Open the MB-19 Board referring to Section 2-5-5.
(2) Remove the Fly Wheel reffering to Section 4-1.
(3) Remove two screws (M2 X 2.7) and remove Dynamic Damper.
(4) Unsolder ten terminals shown at the A. Check that the terminals which project out from the PC Board move freely by means of a pair of tweezers. (Fig. 1)
(5) Remove two screws (M2 X 5).
(6) Install tool A into two screw holes with two accessory supplied screws. Thread an accessory supplied hexagonal screw into the tool A. Remove the Rotary Upper Drum. (Fig. 2)

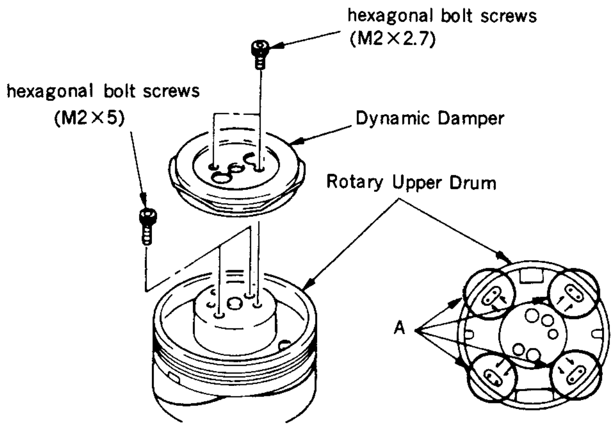

hexagonal bolt screws
(M2×2.7)
hexagonal bolt screws
(M2×5)
Dynamic Damper
Rotary Upper Drum
A

Fig. 1

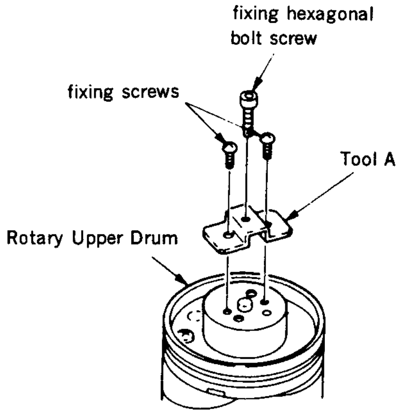

fixing hexagonal
bolt screw
fixing screws
Tool A
Rotary Upper Drum

Fig. 2

Installation:

(1) Clean the flange surface of Lower Drum and contact surface of the new Rotary Upper Drum with a cleaning piece. Check that the surfaces are quite free of dirt and dust.

(2) While adjusting the position of the Rotary Upper Drum and two positioning holes with tool B, carefully insert the Rotary Upper Drum. Check that the terminals project out from the PC Board of the Rotary Upper Drum. If the terminals catch, bend them. Remove the tool B and push the Rotary Upper Drum by hand. (Fig. 4) If it does not go right down, thread the two fixing screws (M2 X 5) into the Rotary Upper Drum alternately but do not tighten them. Insert the tool B into the positioning holes and check that it can insert smoothly. If not insert, loosen the two screws (M2 x 5) and adjust the position of the Rotary Upper Drum by means of a precision screwdriver. (Figs. 3 and 4)

(3) Tighten the two hexagon screws (M2 X 5).

(4) Assemble the parts following with Removal Steps (1) to (4) in reverse order.

Note: Do not tighten all the screws too strongly. Be carefull not to let solder flow under the PC Board.

Note: After replacement, carry out the Tape Path Adjustment referring to Section 6.

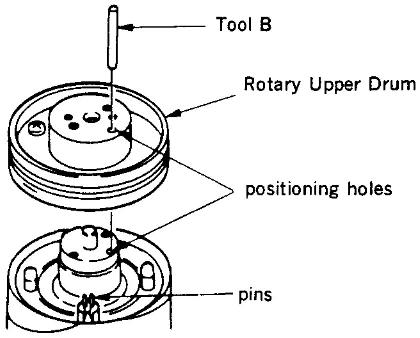


Fig. 3

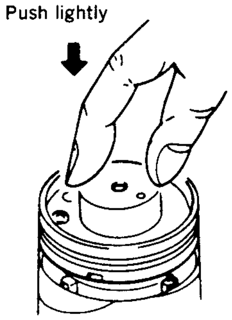


Fig. 4

4-3. REPLACEMENT OF DRUM ASSEMBLY

Removal:

(1) Open the MB-19 Board referring to Section 2-5-5.

(2) Remove the Cassette-up Compartment Assembly referring to Section 2-3.

(3) Remove the Fly Wheel referring to Section 4-1.

(4) Open the HK-4 and SE-10 Boards referring to Sections 2-5-6 and 2-5-7.

(5) Remove two fixing screws and remove Flexible Cover. (Fig. 1)

(6) Disconnect connectors CN805, 806 on the MD-23 Board. Disconnect connector CN001 on the FR-40 Board.

(7) Remove a fixing screw and remove Shaft Ground Terminal.

(8) Remove two fixing screws and remove Drum Assembly. (Fig. 2)

Note: Be careful that the Drum Assembly does not touch No. 3 Guide and IP Roller Guide.

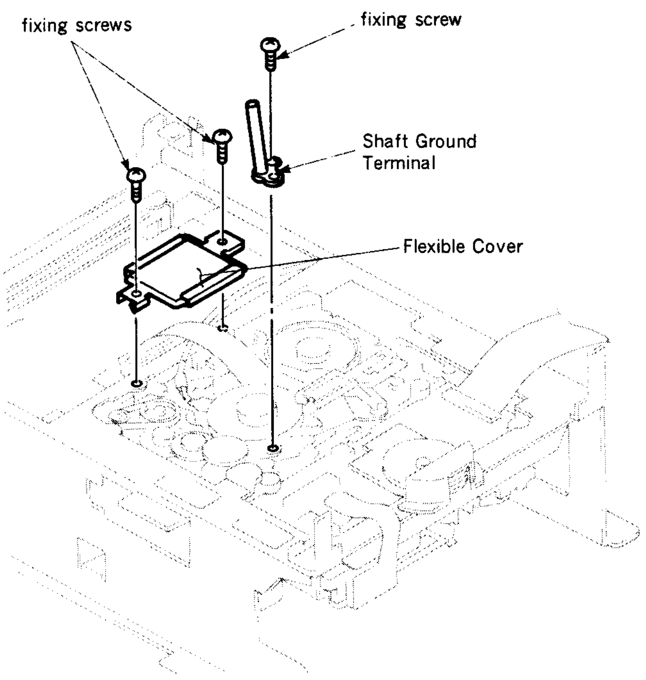

fixing screws
fixing screw
Shaft Ground Terminal
Flexible Cover

Fig. 1

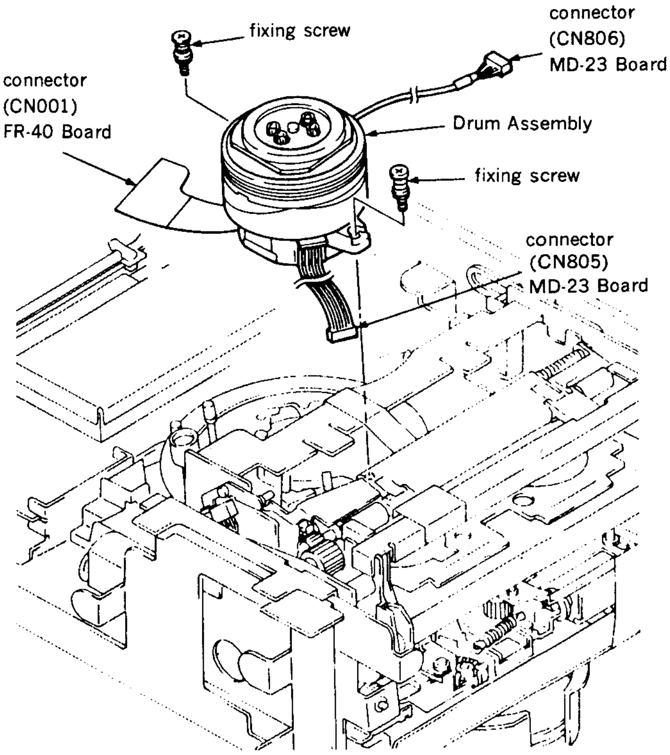

fixing screw
connector (CN806) MD-23 Board
connector (CN001) FR-40 Board
Drum Assembly
fixing screw
connector (CN805) MD-23 Board

Fig. 2

Installation:

(1) Clean the flange surface of new Drum Assembly and contact surface of mechanical chassis by means of a cleaning piece. Check that the surfaces are quite free of dirt and dust.

(2) Put the Drum Assembly into the two projections of the mechanical chassis with the two fixing screws.

Note: Be careful that the screw-driver does not touch head chips. (Fig. 3)

(3) Peel off the tape from the Rotor and FG Stator of the Drum Assembly.

(4) Clean the shaft of the Drum Assembly with a cleaning piece.

(5) Clean the Shaft Ground Terminal and contact surface of Drum Shaft with a cleaning piece. Put the Shaft Ground Terminal into the projection of the mechanical chassis with the fixing screw.

(6) Assemble the parts following Removal Steps (1) to (6) in reverse order.

Note: After replacement, carry out the Tape Path Adjustment referring to Section 6.

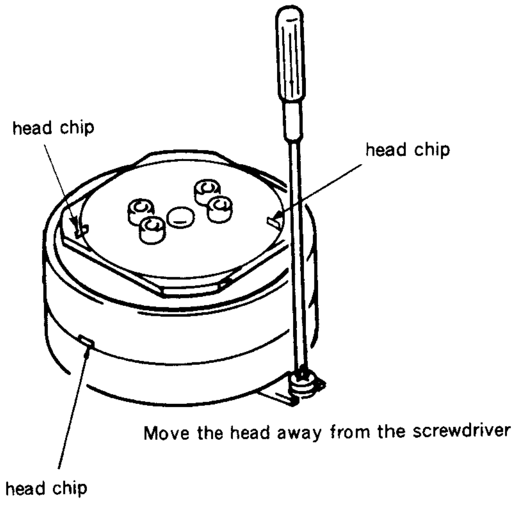


Fig. 3

4-4. REPLACEMENT OF THREADING RING ASSEMBLY

Tools: Mode Selector (Ref. No. J-13)
No. 10 Gear Phase Tool
(Ref. No. J-9)
Sony Oil

Removal:

(1) Remove the Cassette-up Compartment Assembly referring to Section 2-3.

(2) Press the L-mode select button of the Mode Selector and move Guide Base Assembly until just before it is locked. Do not move Threading Ring Assembly.

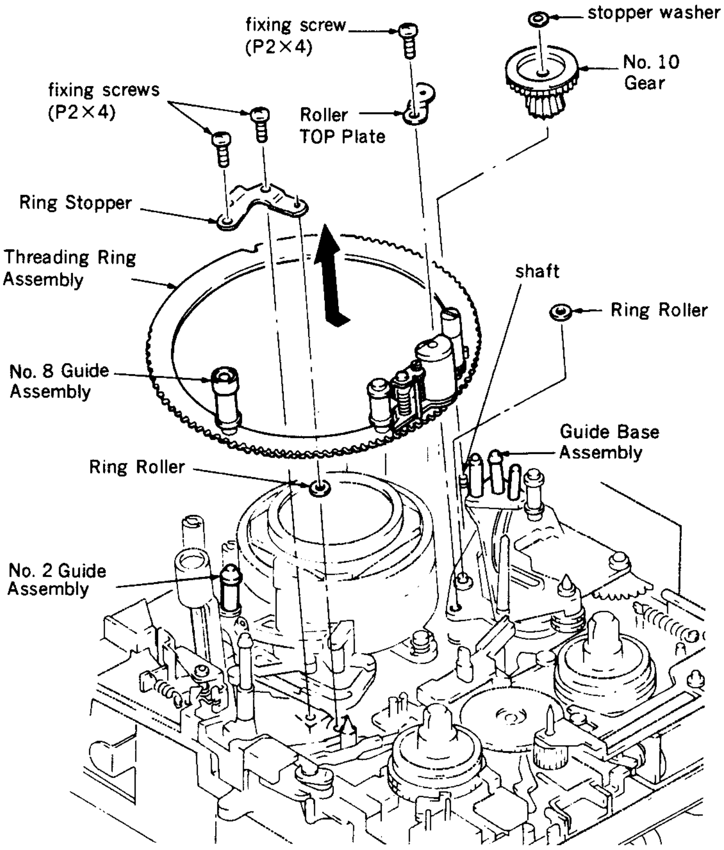
(3) Remove a stopper washer and remove No. 10 Gear Assembly.

(4) Remove a fixing screw and remove Roller Top Plate and Ring Roller.

(5) Remove two fixing screws and remove Ring Stopper and Ring Roller.

(6) Remove Threading Ring Assembly in the direction of the arrow.

Note: If removing the Threading Ring Assembly, does not touch the Drum and Capstan Shaft.


fixing screw
(P2×4)
stopper washer
No. 10
Gear
fixing screws
(P2×4)
Roller
TOP Plate
Ring Stopper
Threading Ring
Assembly
shaft
Ring Roller
No. 8 Guide
Assembly
Guide Base
Assembly
Ring Roller
No. 2 Guide
Assembly

Installation:

(1) Replace the Threading Ring Assembly with a new one.

(2) Install the Threading Ring Assembly selecting into the unthreading mode. Pinch Roller Arm Assembly will be situated at Reel Table side. Check that each part is situated at following Removal Step (2).

(3) Install the Ring Roller and Ring Stopper with the two fixing screws. Check that No. 8 Guide Assembly is situated at the front of the Ring Stopper.

(4) Install the Ring Roller and Roller Top Plate with the fixing screw. Check that the Threading Ring Assembly matches three Ring Rollers.

(5) Apply half drop of oil on the shaft.

(6) Check that the projection of Drive Changer Assembly puts into the notch of the L-switch Assembly. Put No. 10 Gear Phase Tool (Ref. No. J-9) into it.

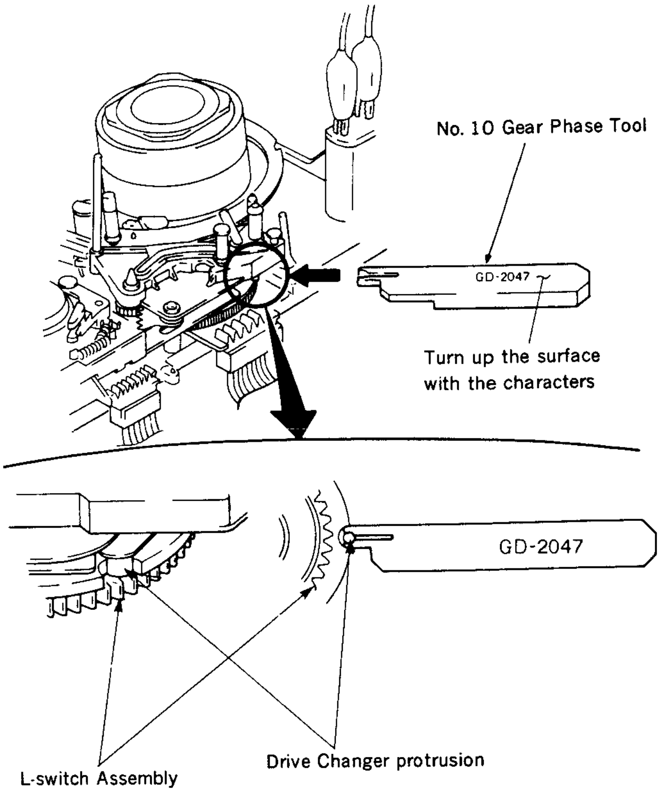
(7) Install the No. 10 Gear Assembly with the Stopper Washer pushing the No. 8 Guide Assembly against the Ring Stopper.

(8) Pull out the No. 10 Gear Phase Tool.

(9) Press the L-mode select button of the Mode Selector and select into the LOADING TOP mode.

(10) Assemble the part following Removal Step (1) in reverse order.

Note: After replacement, carry out the Tape Path Adjustment referring to Section 6.



4-5. REPLACEMENT OF PINCH ROLLER ARM ASSEMBLY

Removal:

(1) Open the MB-19 Board referring to Section 2-5-5.

(2) Remove the Cassette-up Compartment Assembly referring to Section 2-3.

(3) Remove a stopper washer. (Fig. 1)

(4) Hook the spring which is hooked to No. 7 Guide Assembly to the groove of Pinch Roller Arm. (Fig. 2)

(5) Turn Pinch Roller Arm Assembly in the direction of the arrow. (Fig. 3)

(6) Remove the Pinch Roller Arm Assembly in tne direction of the arrow. (Fig. 4)

(7) Remove the spring. (Fig. 5)

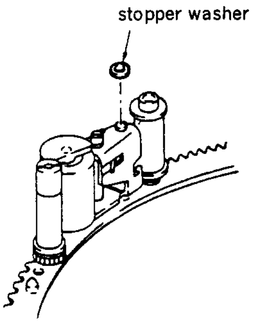

stopper washer

Fig. 1

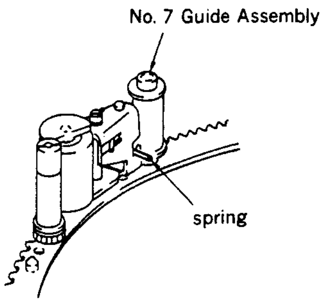

No. 7 Guide Assembly
spring

Fig. 2

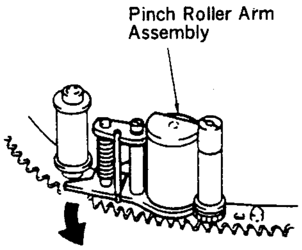

Pinch Roller Arm Assembly

Fig. 3

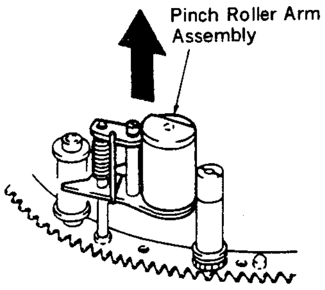

Pinch Roller Arm Assembly

Fig. 4

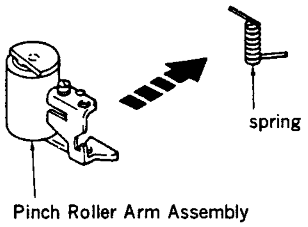

spring
Pinch Roller Arm Assembly

Fig. 5

Installation:

(1) Replace the Pinch Roller Arm Assembly with a new one.

(2) Install the spring and hook it to the Pinch Roller Arm Assembly. (Fig. 1)

(3) Insert a clip or another thin rod into the hole of the Pinch Roller Arm Assembly. (Figs. 2 and 3)

(4) Put the clip to the shaft of the Threading Ring Assembly. Install the Pinch Roller Assembly. (Figs. 4 and 5)

(5) Hook the spring to No. 7 Guide Assembly. Check that the spring is hooked to shown at the A. (Fig. 6)

(6) Assemble the parts following Removal Steps (1) to (3) in reverse order.

Note: After replacement, carry out the Tape Path Check referring to Section 6-6.

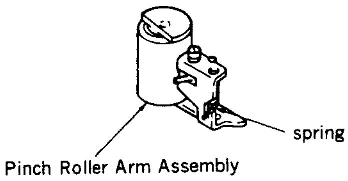

spring
Pinch Roller Arm Assembly

Fig. 1

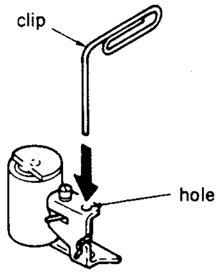


Fig. 2

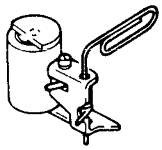


Fig. 3

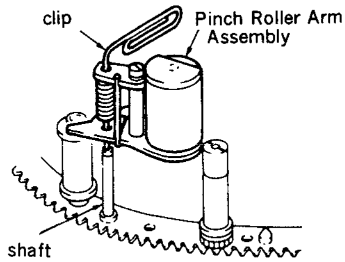

clip
Pinch Roller Arm Assembly
shaft

Fig. 4

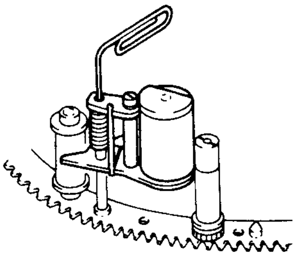


Fig. 5

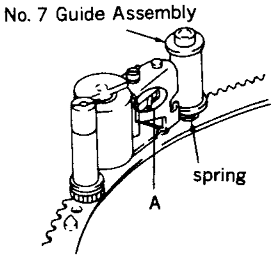

No. 7 Guide Assembly
spring
A

Fig. 6

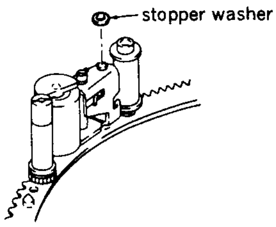

stopper washer

Fig. 7

4-6. REPLACEMENT OF CAPSTAN MOTOR

Removal:

(1) Open the MB-19 Board referring to Section 2-5-5.

(2) Remove the Cassette-up Compartment Assembly referring to Section 2-3.

(3) Remove the Threading Ring Assembly referring to Section 4-4.

(4) Open the HK-4 and SE-10 Boards referring to Sections 2-5-6 and 2-5-7.

(5) Remove two fixing screws and remove Flexible Cover.

(6) Remove the harness of Capstan Motor from Wire Holder.

(7) Remove two fixing screws and remove the Wire Holder.

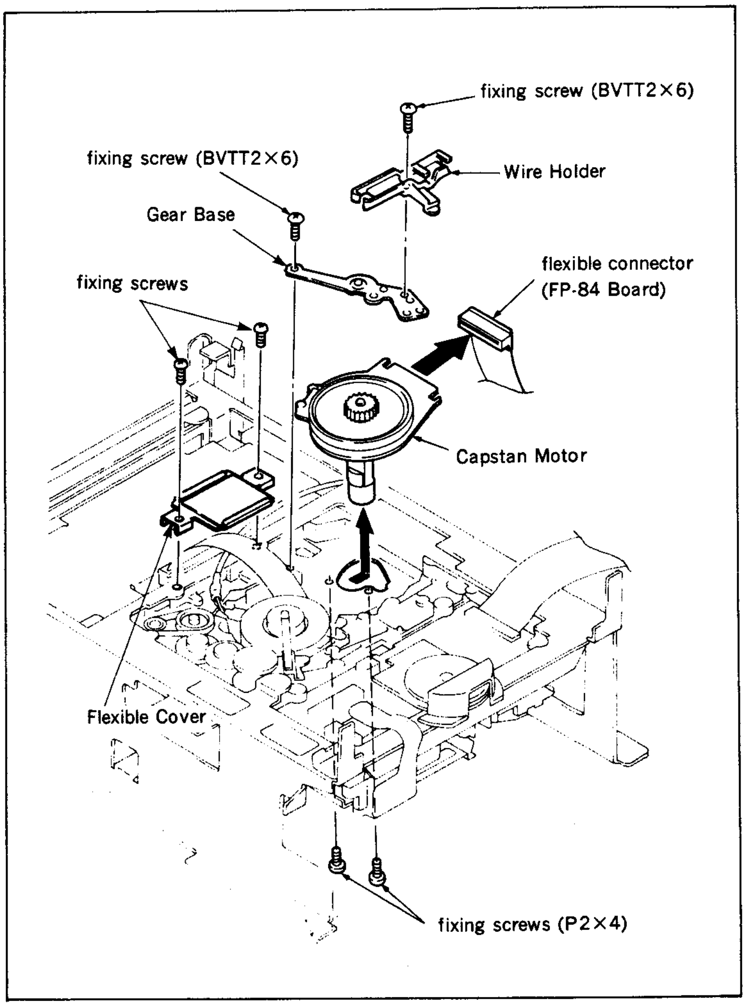
(8) Remove a fixing screw and remove Gear Base.

(9) Disconnect the flexible connector of the Capstan Motor.

(10) Remove two fixing screws and remove the Capstan Motor in the direction of the arrow.

Installation:

(1) Replace the Capstan Motor with a new one and assemble the parts following Removal Steps (1) to (10) in reverse order.


fixing screw (BVTT2×6)
Wire Holder
fixing screw (BVTT2×6)
Gear Base
flexible connector
(FP-84 Board)
fixing screws
Capstan Motor
Flexible Cover
fixing screws (P2×4)

4-7. REPLACEMENT OF THREADING MOTOR ASSEMBLY

Removal:

(1) Open the MB-19 Board referring to Section 2-5-5.

(2) Open the HK-4 and SE-10 Boards referring to Section 2-5-6 and 2-5-7.

(3) Remove L Motor Belt.

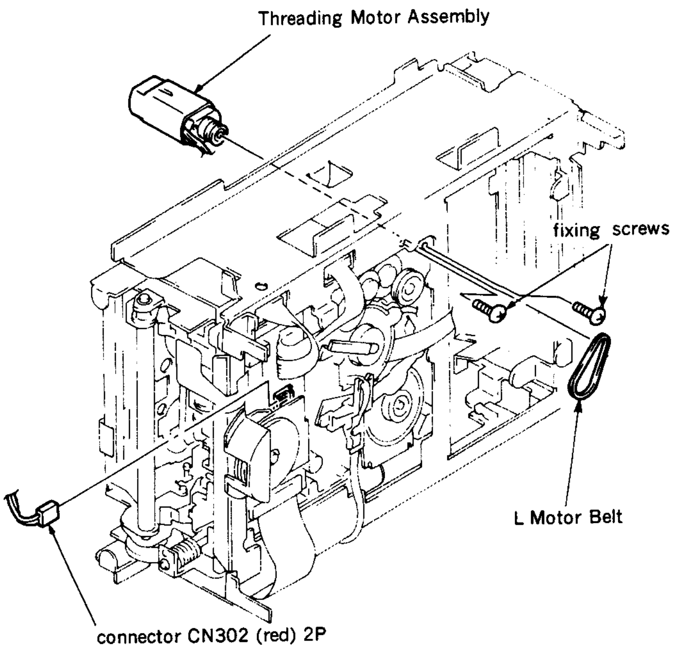
(4) Disconnect connector CN302 on the RS-31 Board.

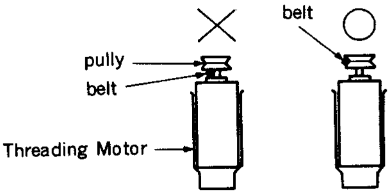
(5) Remove two fixing screws and remove Threading Motor Assembly.

Installation:

(1) Replace the Threading Motor Assembly with a new one. Assemble the parts following Removal Steps (1) to (5) in reverse order.

Note: Clean the L Motor Belt with a cleaning piece before installing it.


Threading Motor Assembly
fixing screws
L Motor Belt
connector CN302 (red) 2P


belt
pully
belt
Threading Motor

4-8. REPLACEMENT OF REEL MOTOR

Removal:

(1) Open the HK-4 and SE-10 Boards referring to Section 2-5-6 and 2-5-7.

(2) Remove the FP-122 Flexible Board from the Reel Motor Belt.

(3) Remove the FP-206 Flexible Board from the RS-31 Board.

(4) Remove the two fixing screws of Motor Bracket.

(5) Put a flatblade screwdriver into shown at the A. Release the projection B and remove the Motor Bracket.

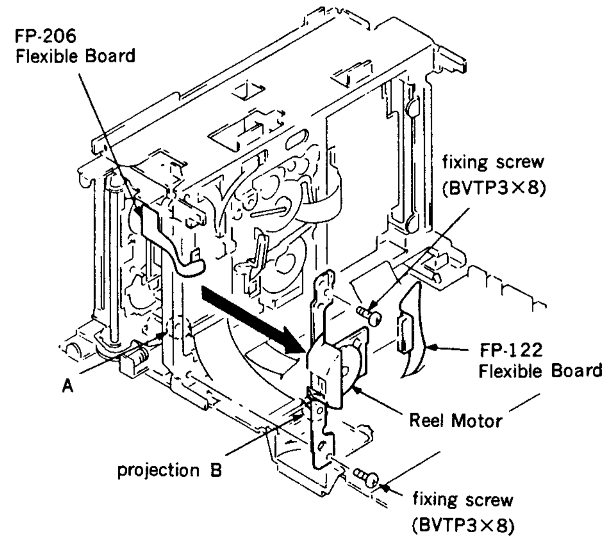
Note: If the Motor Bracket is removed by means of a hand directly, it tends to damage it.

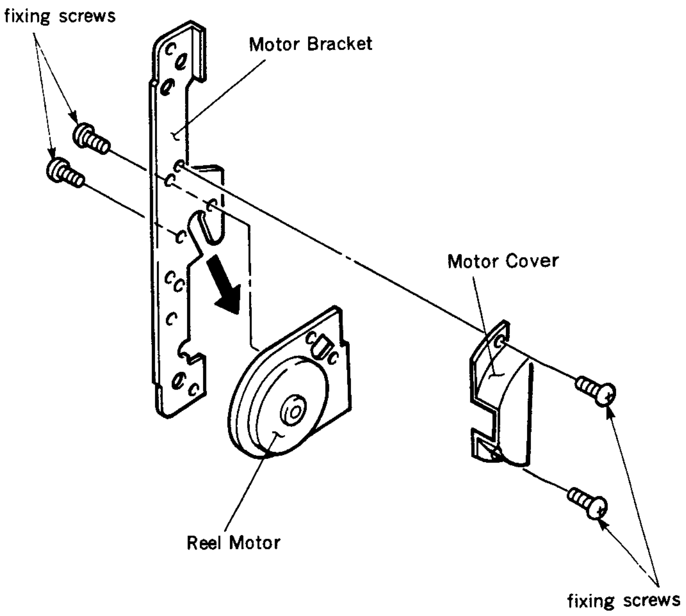
(6) Remove two fixing screws and Motor Cover from the Motor Bracket.

(7) Remove two fixing screws and remove Reel Motor in the direction of the arrow.

Installation:

(1) Replace the Reel Motor with a new one. Assemble the parts following Removal Steps (1) to (7) in reverse order.


FP-206
Flexible Board
fixing screw
(BVTP3×8)
FP-122
Flexible Board
A
Reel Motor
projection B
fixing screw
(BVTP3×8)


fixing screws
Motor Bracket
Motor Cover
Reel Motor
fixing screws

4-9. REPLACEMENT OF NO. 3 OR NO. 4 GUIDE

Removal:

(1) Open the MB-19 Board referring to Section 2-5-5.

(2) If replacing the No. 3 Guide, remove the Fly Wheel referring to Section 4-1.

(3) Turn the Rotary Upper Drum counterclockwise and release head block from No. 3 Guide or No. 4 Guide.

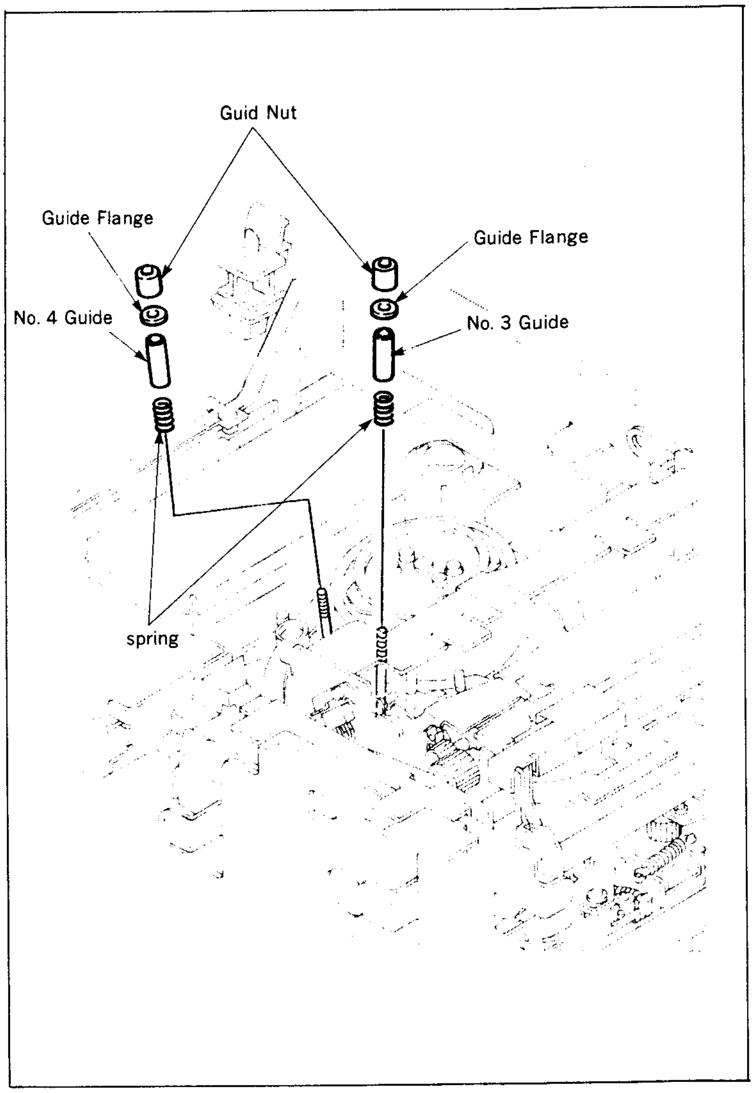
(4) Remove Guide Nut and remove Guide Flange, No. 3 Guide (or No. 4 Guide) and spring.

Installation:

(1) Replace tne No. 3 Guide (or No. 4 Guide) with a new one.

(2) Assemble the parts following Removal Steps (1) to (4) in reverse order.

Note: After replacement, adjust the height of the No. 3 and No. 4 Guides to meet the tape path condition of Section 6-6-3 by turing the Guide Nut.



4-10. REPLACEMENT OF ENTRANCE GUIDE (P) ASSEMBLY (NO. 2 GUIDE ASSEMBLY)

Removal:

(1) Open the MB-19 Board referring to Section 2-5-5.

(2) Remove the Cassette-up Compartment Assembly referring to Section 2-3.

(3) Remove the Fly Wheel referring to Section 4-1.

(4) Turn the Rotary Upper Drum counterclockwise and release head block from Entrance Guide (P) Assembly.

(5) Remove the Guide Nut and remove the Guide Flange, No. 3 Guide and spring.

(6) Remove two fixing screws and remove Entrance Guide (P) Assembly.

Installation:

(1) Check that the Mechanical Deck Block selects into the LOADING TOP mode.

(2) Replace the Entrance Guide (P) Assembly with a new one.

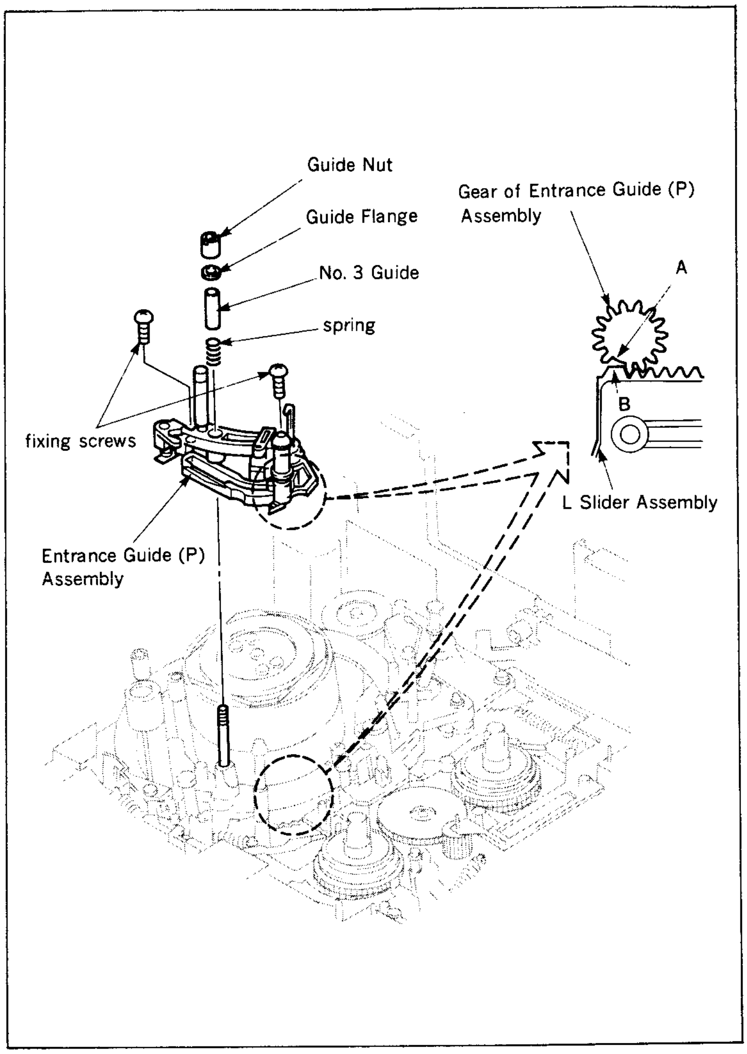
(3) Engage shown at the A of the Entrance Guide (P) Assembly and show at the B of the L Slider Assembly with two fixing screws.

(4) Assemble the parts following Removal Steps (3) and (5) in reverse order.

(5) Carry out the FWD Back Tension Adjustment referring to Section 5-5.

(6) Assemble the parts following Removal Steps (1) and (2) in reverse order.

Note: After replacement, carry out the Tape Path Adjustment referring to Section 6.


Guide Nut
Guide Flange
No. 3 Guide
spring
fixing screws
Entrance Guide (P) Assembly
Gear of Entrance Guide (P) Assembly
A
B
L Slider Assembly

4-11. REPLACEMENT OF SLANT GUIDE ASSEMBLY

Tool: Mode Selector (Ref. No. J-13)

Removal:

(1) Remove tne Cassette-up Compartment Assembly referring to Section 2-3.

(2) Remove the Threading Ring Assembly referring to Section 4-4.

(3) Remove a fixing screw and E ring.

(4) Remove Slant Guide Block Assembly.

Installation:

(1) Operate tne L-mode select button of the Mode Selector and align the right edge of Lock Slider M Assembly and the right edge of L Slider Assembly. (Fig. 2)

Note: Check that the the notch of Slant Guide Drive Gear is situated at as shown in fig. 2.

(2) Install the Guide Base Assembly of new Slant Guide Block Assembly selecting into the *unthreading end.

* The Guide Base Assembly will be situated at the Reel Table side.

(3) Assemble the parts following Removal Steps (1) to (3) in reverse order.

Note: After replacement, carry out the Tape Path Check referring to Section 6-6.

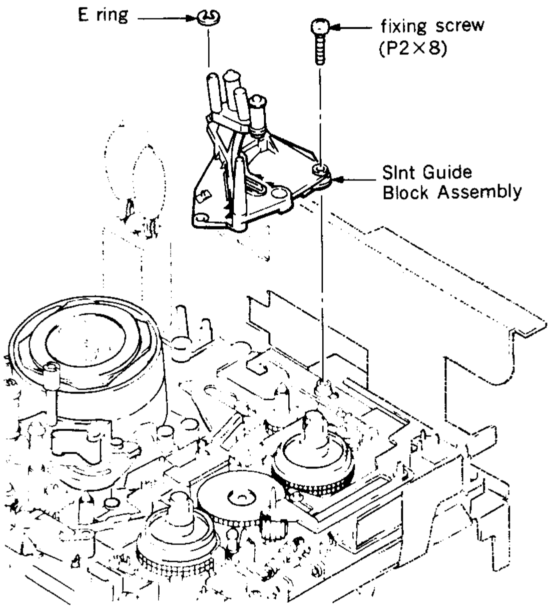

E ring
fixing screw (P2×8)
Slnt Guide Block Assembly

Fig. 1

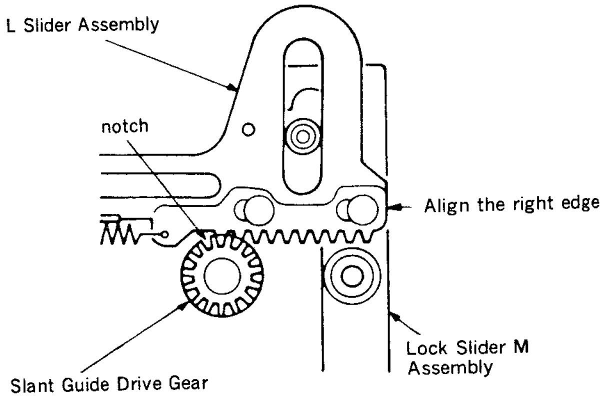

L Slider Assembly
notch
Align the right edge
Lock Slider M Assembly
Slant Guide Drive Gear

Fig. 2

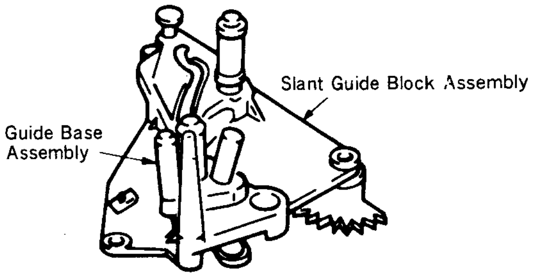

Slant Guide Block Assembly
Guide Base Assembly

Fig. 3

4-12. REPLACEMENT OF NO. 5 GUIDE BLOCK COMPLETE ASSEMBLY

Removal:

(1) Open tne MB-19 Board referring to Section 2-5-5.

(2) Turn the Rotary Upper Drum counter-clockwise and release head block from the fixing screw of Guide Block.

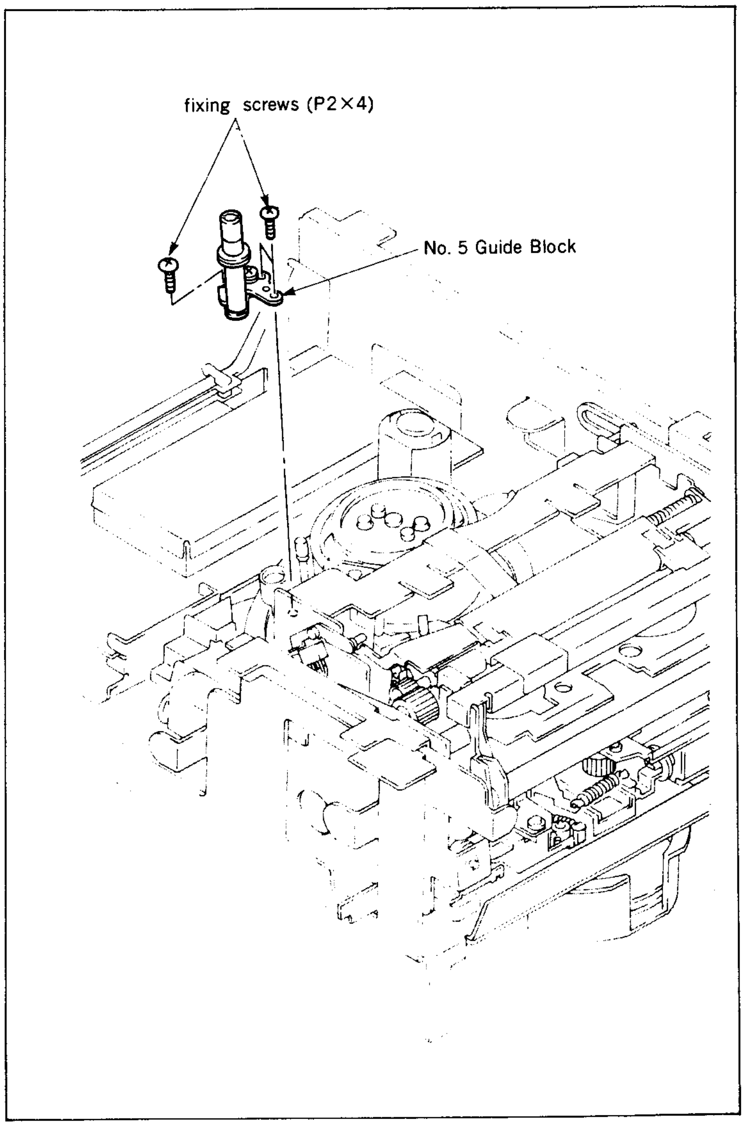
(3) Remove three fixing screws and remove No. 5 Guide Block Complete Assembly.

Installation:

(1) Replace the No. 5 Guide Block Complete Assembly with a new one.

(2) Assemble the parts following Removal Steps (1) and (3) in reverse order.

Note: After replacement, carry out the Tape Path Adjustment referring to Section 6.



4-13. REPLACEMENT OF REEL TABLE ASSEMBLY

Tool: Mode Selector (Ref. No. J-14)
Cassette Tape
Dial Tension Gauge (Ref. No. J-6)
Tension Measurement Reel
(30 mm dia.) (Ref. No. J-7)
Sony Oil

Removal:

(1) Remove the Cassette-up Compartment Assembly referring to Section 2-3.

(2) Press the M-mode select button of the Mode Selector and select into the FF/REW mode.

(3) Remove a fixing screw and remove Reel Table Stopper.

(4) Remove S Reel Table Assembly.
Note: Be sure to hold upper reel claw when removing it.

Installation:

(1) Apply half drop of oil on the top point of Reel Shaft.

(2) Move S Main Brake Assembly in the direction of the arrow.

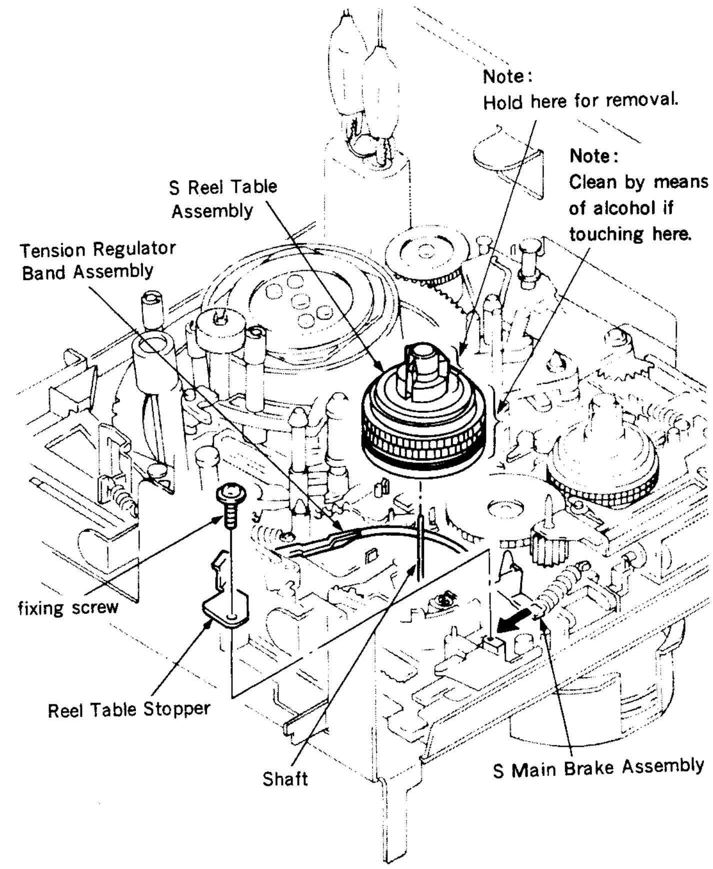
(3) Install new S Reel Table Assembly taking care not to pinch the Tension Regulator Band Assembly.

(4) Install Reel Table Stopper with a fixing screw.

(5) Press the M-mode select button of the Mode Selector and select into the LOADING/UNLOADING mode.

(6) Carry out the FWD Back Tension Adjustment after carrying out the FWD running more than 2 minutes referring to Section 5-5.

(7) Install the Cassette-up Compartment Assembly referring to Section 2-3.


Note:
Hold here for removal.
Note:
Clean by means of alcohol if touching here.
S Reel Table Assembly
Tension Regulator Band Assembly
fixing screw
Reel Table Stopper
Shaft
S Main Brake Assembly

4-14. REPLACEMENT OF T REEL TABLE ASSEMBLY

Tool: Mode Selector (Ref. No. J-13)
Sony Oil

Removal:

(1) Remove the Cassette-up Compartment Assembly referring to Section 2-3.

(2) Press the L-mode select button of the Mode Selector and select into the UNLOADING WAIT mode.

(3) Hook the spring which is hooked to T.S Brake Assembly to the claw of Lock Slider Assembly.

(4) Remove a stopper washer and remove the T.S Brake Assembly.

(5) Press the M-mode select button of the Mode Selector and select into the EJECT mode.

(6) Move Drive Gear B Assembly in the direction of the arrow.

(7) Remove T Reel Table Assembly.

Note: Be sure to hold upper reel claw if removing it.

Installation:

(1) Apply half drop of oil on the top point of the Reel Shaft.

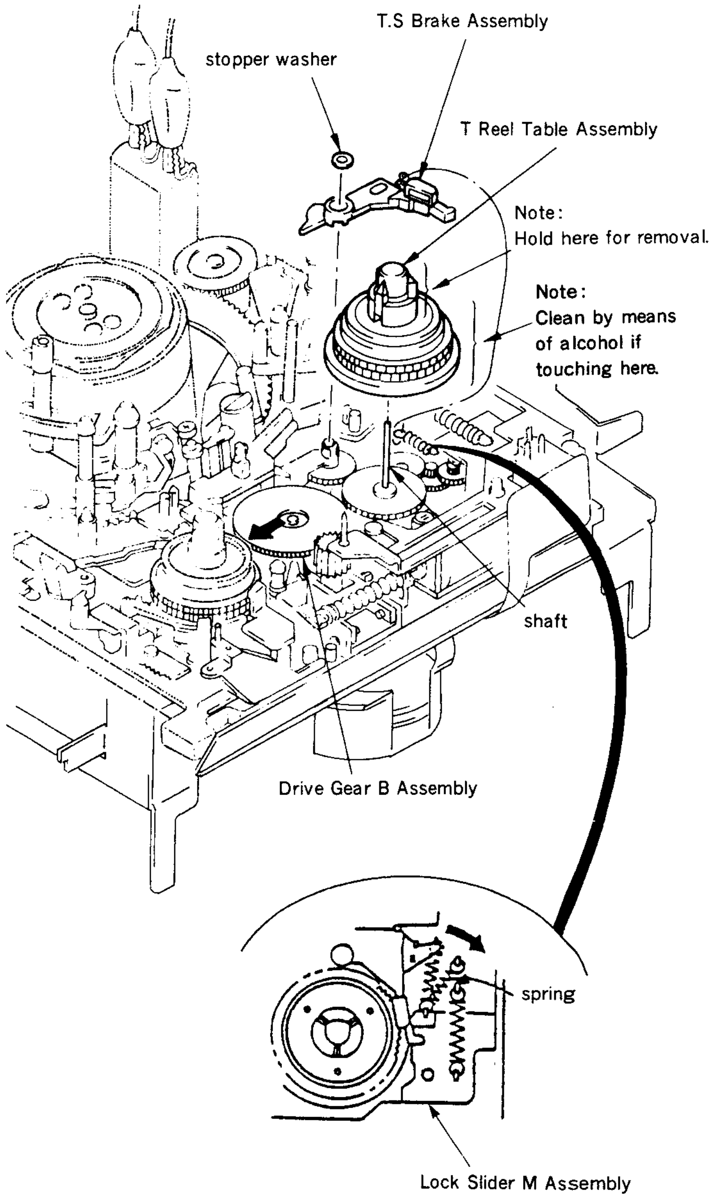
(2) Move the Drive Gear B Assembly in the direction of the arrow. Check that the Mode Selector selects into the EJECT mode.

(3) Replace the T Reel Table Assembly with a new one.

(4) Assemble the parts following Steps (4) and (5) in reverse order.

(5) Select the L-mode of the Mode Selector into the LOADING TOP mode and select the M-mode of the Mode Selector into the LOADING/UNLOADING mode.

(6) Install the Cassette-up Compartment Assembly referring to Section 2-3.


T.S Brake Assembly
stopper washer
T Reel Table Assembly
Note:
Hold here for removal.
Note:
Clean by means of alcohol if touching here.
shaft
Drive Gear B Assembly
spring
Lock Slider M Assembly

4-15. REPLACEMENT OF PINCH PRESS ARM ASSEMBLY

Tool: Sony Oil

Removal:

(1) Open the MB-19 Board referring to Section 2-5-5.

(2) Hook the spring which is hooked to Spring Hook Assembly to Pinch Press Assembly.

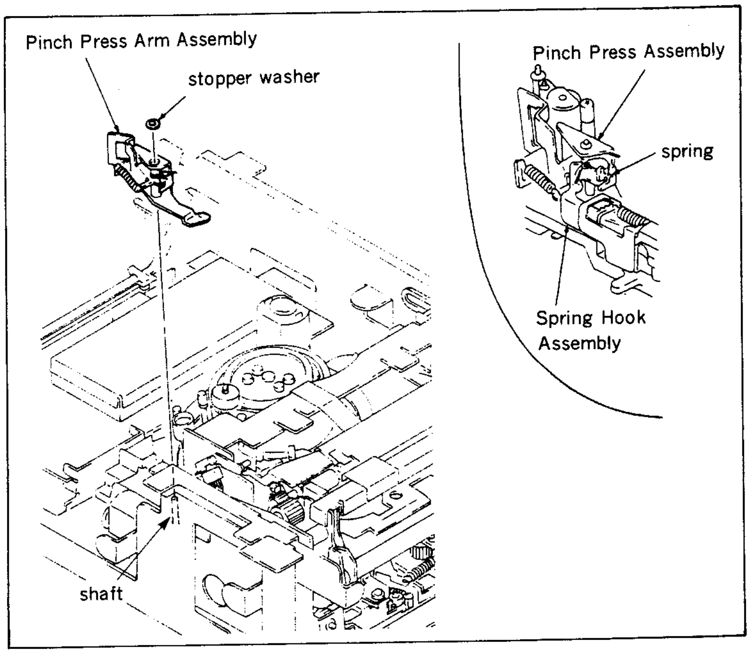
(3) Remove a stopper washer and remove the Pinch Press Arm Assembly.

Installation:

(1) Apply half drop of oil on the shaft.

(2) Replace the Pinch Press Arm Assembly with a new one.

(3) Assemble the parts following Removal Steps (1) to (3) in reverse order.


Pinch Press Arm Assembly
stopper washer
shaft
Pinch Press Assembly
spring
Spring Hook Assembly

4-16. REPLACEMENT OF TENSION REGULATOR ARM ASSEMBLY

Tool: Mode Selector (Ref. No. J-13)
Sony Oil
Locking Compound

Removal:

(1) Remove the Cassette-up Compartment Assembly referring to Section 2-3.

(2) Hook the spring which is hooked to the Spring Hook Assembly to the Pinch Press Arm Assembly.

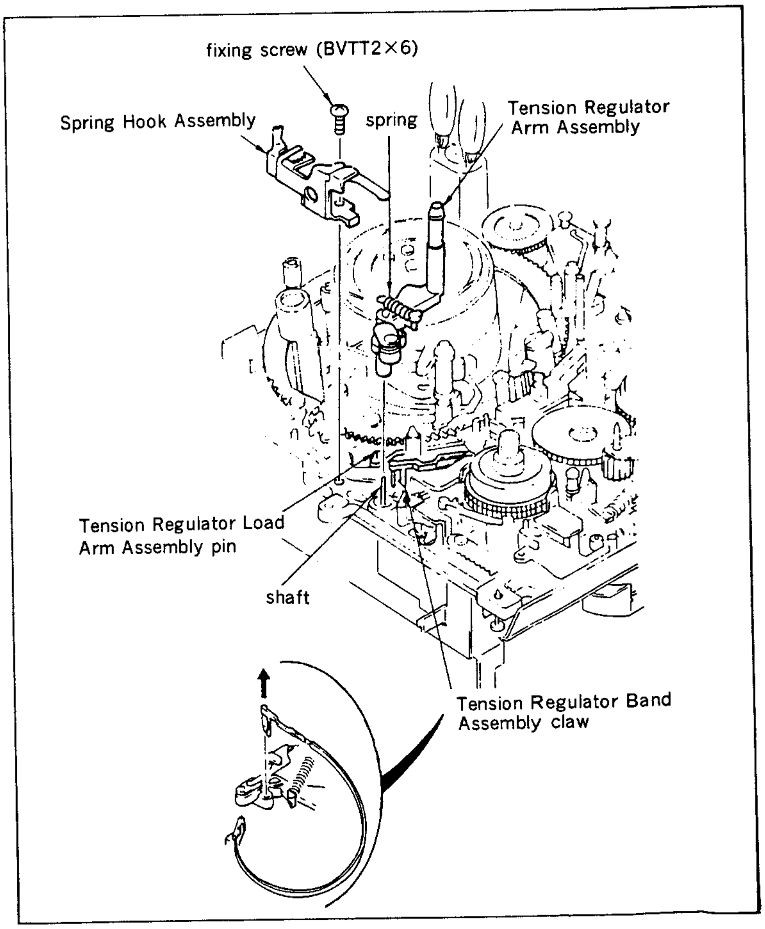
(3) Remove a fixing screw and remove the spring which is hooked to Tension Regulator Spring Hook Assembly.

(4) Remove a fixing screw and remove the Tension Regulator Spring Hook Assembly.

(5) Press the M-mode select button of the Mode Selector and select into the $\boxed{\text{FF/REW}}$ mode.

(6) Remove the claw of Tension Regulator Band Assembly.

(7) Remove the Tension Regulator Arm Assembly.


fixing screw (BVTT2×6)
Spring Hook Assembly
spring
Tension Regulator Arm Assembly
Tension Regulator Load Arm Assembly pin
shaft
Tension Regulator Band Assembly claw

Installation:

1. Apply half drop of oil on the shaft.
2. Replace the Tension Regulator Arm Assembly with a new one.
3. Put the pin of Tension Regulator Load Arm Assembly into the cam groove of the Tension Regulator Arm Assembly. Install the Tension Regulator Assembly.
4. Install the claw of the Tension Regulator Band Assembly.

   Note: Do not touch the inside of the band and bend it.
5. Press the M-mode select button of the Mode Selector and select into the $\boxed{\text{LOADING/UNLOADING}}$ mode.
6. Install the Tension Regulator Spring Hook Assembly with the fixing screw.
7. Smear locking compound to the head of the fixing screw.
8. Assemble the Parts following Removal Steps (1) to (3) in reverse order.

Note: After replacement, carry out the Tape Path Check referring to Section 6-6.

4-17. REPLACEMENT OF TENSION REGULATOR BAND ASSEMBLY

Tool: Mode Selector (Ref. No. J-13)
Cassette Tape
Dial Tension Gauge (Ref. No. J-6)
Tension Measurement Reel
(30 mm dia.) (Ref. No. J-7)

Removal:

(1) Remove the Cassette-up Compartment Assembly referring to Section 2-3.

(2) Remove the S Reel Table Assembly referring to Section 4-13.

(3) Release the claw of Band Arm and remove one side of Tension Regulator Band Assembly.

(4) Release a claw from the Tension Regulator Arm Assembly and remove the Tension Regulator Band Assembly.

Installation:

(1) Replace the Tension Regulator Band Assembly with a new one.

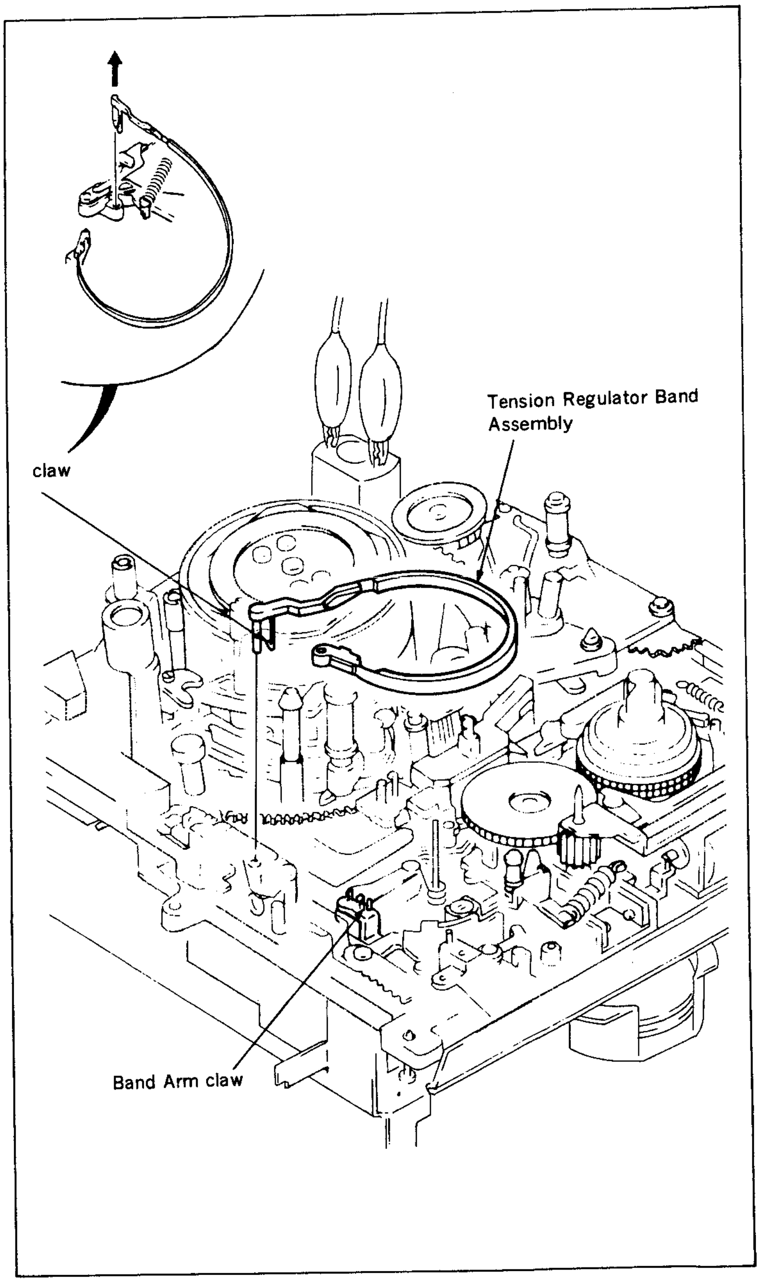
(2) Install the Tension Regulator Band Assembly following Removal Steps (3) and (4) in reverse order.

Note: Do not touch the inside of the band and bend it.

(3) Install the S Reel Table Assembly referring to Section 4-13.

(4) Carry out the FWD Back Tension Adjustment after carring out the FWD running more than 2 minutes referring to Section 5-5.

(5) Install the Cassette-up Compartment Assembly referring to Section 2-3.



4-18. REPLACEMENT OF L SLIDER ASSEMBLY

Tools: Mode Selector (Ref. No. J-13)
Sony Grease

Removal:

(1) Remove the Cassette-up Compartment Assembly referring to Section 2-3.

(2) Remove the Fly Wheel referring to Section 4-1.

(3) Remove the Threading Ring Assembly referring to Section 4-4.

(4) Remove the Entrance Guide (P) Assembly referring to 4-10.

(5) Remove the Slant Guide Block Assembly referring to Section 4-11.

(6) Press the L-mode select button of the Mode Selector and select into the DRUM START mode.

(7) Remove Slant Guide Drive Gear.

(8) Remove two stopper washers from L Slider Assembly.

(9) Lift the right side of the L Slider Assembly pushing the projection of the RL Arm in the direction of the arrow. Remove the L Slider Assembly.

(10) Turn the right side of the L Slider Assembly. Remove the pin of the Tension Regulator Load Arm Assembly from the cam groove of the Tension Regulator Arm Assembly. Remove the L Slider Assembly. (Fig. 2)

(11) Remove a stopper washer and remove the Tension Regulator Load Arm Assembly.

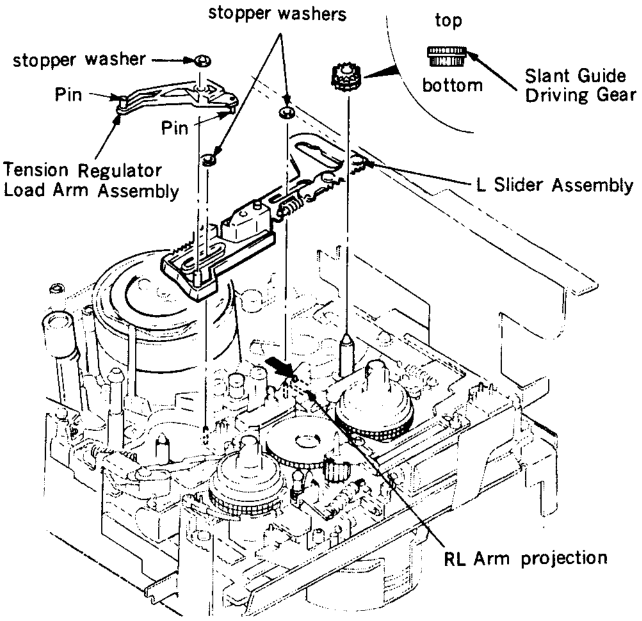

stopper washers
top
stopper washer
Pin
bottom
Slant Guide Driving Gear
Pin
Tension Regulator Load Arm Assembly
L Slider Assembly
RL Arm projection

Fig. 1

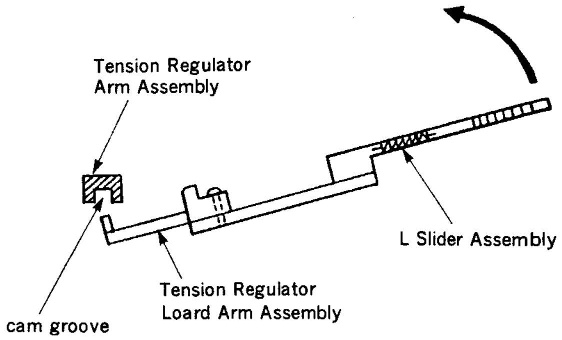

Tension Regulator Arm Assembly
L Slider Assembly
Tension Regulator Loard Arm Assembly
cam groove

Fig. 2

Installation:

(1) Replace the L Slider Assembly with a new one and smear Sony Grease to three longitudinal holes as shown in fig. 3.

(2) Assemble the parts following Removal Steps (8) to (11) in reverse order.

Note: If putting the pin of the Tension Regulator Load Arm Assembly into the cam groove of the Tension Regulator Arm Assembly, put the another pin into the groove of the M Slider.

(3) Press the L-mode select button of the Mode Selector and align the right edge of the L Slider Assembly and the right edge of the Lock Slider M Assembly. (Fig. 4)

(4) Engage the Slant Guide Drive Gear with the L Slider Assembly as shown in fig. 4.

(5) Assemble the parts following Removal Steps (1) to (5) in reverse order.

Note: After replacement, carry out the Tape Path Adjustment referring to Section 6.

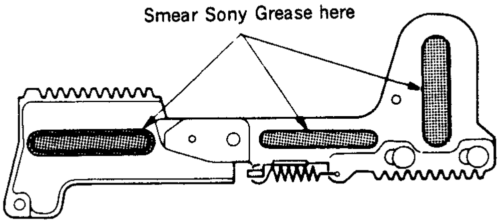

Smear Sony Grease here

Fig. 3

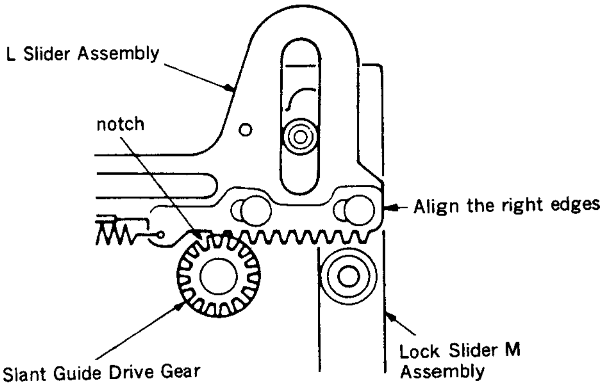

L Slider Assembly
notch
Align the right edges
Slant Guide Drive Gear
Lock Slider M Assembly

Fig. 4

4-19. REPLACEMENT OF L-SWITCH ASSEMBLY

Tool: Mode Selector (Ref. No. J-13)
Sony Oil
Sony Grease

Removal:

(1) Remove the Cassette-up Compartment Assembly referring to Section 2-3.
(2) Remove the Fly Wheel referring to Section 4-1.
(3) Remove the Threading Ring Assembly referring to Section 4-4.
(4) Remove the Entrance Guide (P) Assembly referring to Section 4-10.
(5) Remove the Slant Guide Block Assembly referring to Section 4-11.
(6) Remove the L Slider Assembly referring to Section 4-18.
(7) Remove Lock Slider Retainer.
(8) Remove the tension spring which is hooked to Lock Slider A.
(9) Remove a fixing screw and remove the Lock Slider A.
(10) Remove the stop washer of Drive Changer Assembly and remove a torsion spring.
(11) Remove the Drive Changer Assembly.
(12) Disconnect connector (6P) on the L-switch Assembly.
(13) Remove two fixing screws and remove L-switch Assembly.

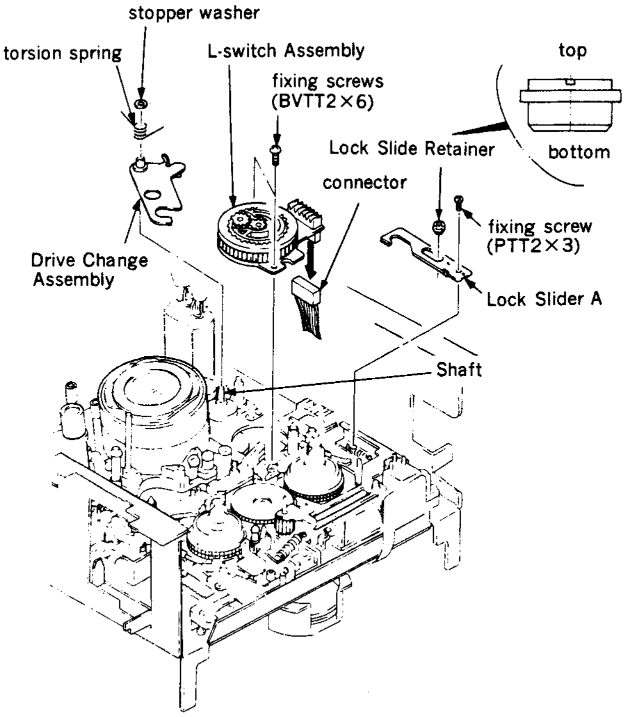

stopper washer
torsion spring
L-switch Assembly
top
fixing screws
(BVTT2×6)
Lock Slide Retainer
bottom
connector
fixing screw
(PTT2×3)
Drive Change
Assembly
Lock Slider A
Shaft

Fig. 1

Installation:

(1) Replace the L-switch Assembly with a new one. Apply half drop of oil on Planetary Roller Shaft.

(2) Assemble the parts following Removal Steps (12) and (13) in reverse order.

(3) Press the L-mode select button of the Mode Selector and check that the L-switch Assembly rotates.

(4) Apply half drop of oil on the fixing shaft of the Drive Changer Assembly.

(5) Smear grease to the U groove of the Drive Changer Assembly. (Fig. 2)

(6) Assemble the parts following Removal Steps (10) and (11) in reverse order.

(7) Press the L-mode select button of the Mode Selector and check that the L-switch Assembly rotates.

(8) Assemble the parts following Removal Steps (7) to (9) in reverse order.

(9) Press the L-mode select button of the Mode Selector so that the Planetary Roller Shaft is situated at as shown in fig. 3.

(10) Assemble the parts following Removal Steps (1) to (6) in reverse order.

Note: After replacement, carry out the Tape Path Adjustment referring to Section 6.

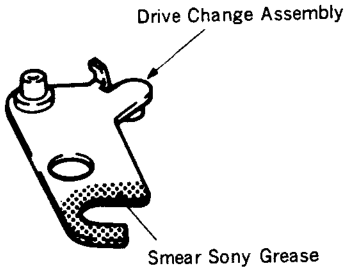

Drive Change Assembly
Smear Sony Grease

Fig. 2

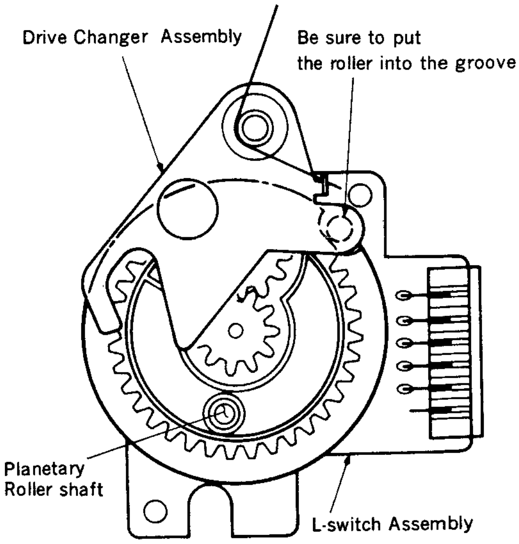

Drive Changer Assembly
Be sure to put the roller into the groove
Planetary Roller shaft
L-switch Assembly

Fig. 3

4-20. REPLACEMENT OF PLUNGER SOLENOID

Removal:

(1) Open the MB-19 Board referring to Section 2-5-5.

(2) Remove the Cassette-up Compartment Assembly referring to Section 2-3.

(3) Remove the spring which is hooked to Lock Slider M Assembly.

(4) Remove two stopper washers.

(5) Remove a fixing screw and remove the Lock Slider M Assembly.

(6) Unsolder the three terminals of the Plunger Solenoid on the FP-206 Board.

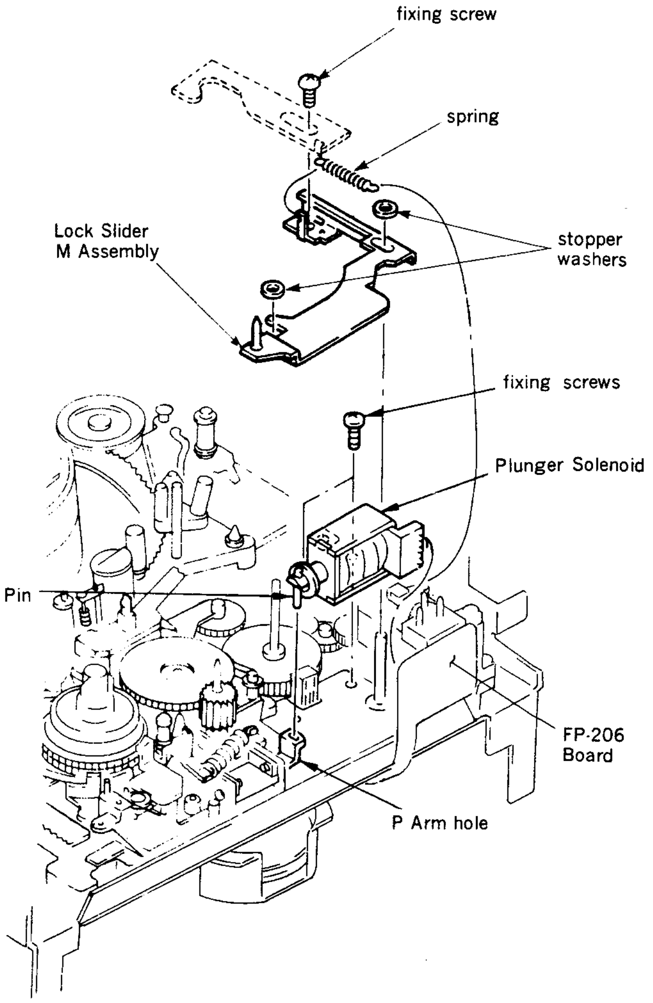
(7) Remove two fixing screws and remove the Plunger Solenoid. Be careful not to damage T Reel Assembly with a screwdriver, or do not touch it.

Installation:

(1) Replace the Plunger Solenoid with a new one.

(2) Put the pin of the Plunger Solenoid into the hole of P Arm and install the new Plunger Solenoid with the two fixing screws. Be careful not to damage the T Reel Assembly with a screwdriver, or do not touch it.

(3) Assemble the parts following Removal Steps (1) to (6) in reverse order.


fixing screw
spring
Lock Slider
M Assembly
stopper
washers
fixing screws
Plunger Solenoid
Pin
FP-206
Board
P Arm hole

4-21. REPLACEMENT OF M-SWITCH ASSEMBLY

Tool: Mode Selector (Ref. No. J-13)
Sony Oil

Removal:

(1) Remove the Cassette-up Compartment Assembly referring to Section 2-3.

(2) Disconnect connector CN301 on the RS-31 Board.

(3) Remove the T Reel Table Assembly referring to Section 4-14.

(4) Remove a stopper washer and remove Drive Gear B Assembly.

(5) Remove the LD-1 Board. (Fig. 1)

(6) Remove the Lock Slider M Assembly referring to Removal Steps (3) to (5) at Section 4-20.

(7) Remove a tension spring and remove B Release Arm Assembly.

(8) Check that the M-mode of the Mode Selector selects into the EJECT mode.

(9) Remove a stopper washer and remove Mode Output Gear.

(10) Release tne two claws of Control Motor Cover and remove Push Switch.

(11) Disconnect conntor (6P) on the M-switch Assembly.

(12) Remove two fixing screws and remove the Control Motor Cover L.

(13) Remove a fixing screw. Push T.S Release Arm in the derection of arrow A lifting up M-switch Assembly. Remove the M-switch Assembly after pushing T Main Brake Assembly in the direction of arrow B.

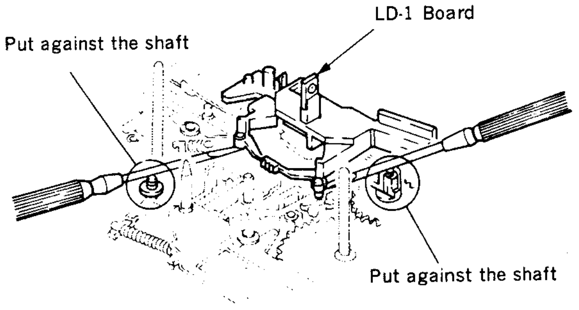

LD-1 Board
Put against the shaft
Put against the shaft

Fig. 1

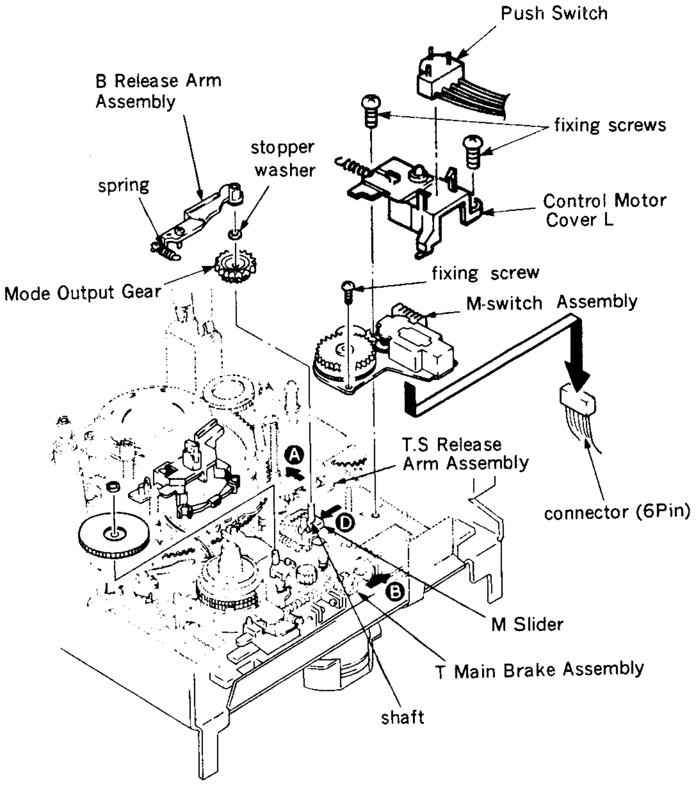

Push Switch
B Release Arm Assembly
fixing screws
stopper washer
spring
Control Motor Cover L
fixing screw
Mode Output Gear
M-switch Assembly
A
T.S Release Arm Assembly
D
connector (6Pin)
B
M Slider
T Main Brake Assembly
shaft

Fig. 2

How to remove DC Motor:

(1) Unsolder two terminals shown at the A. Remove DC Motor from the MS-4 Board. (Fig. 3)

Installation:

(1) Replace the M-switch Assembly with a new one.
(2) Assemble the parts following Removal Steps (10) to (13) in reverse order.
(3) Check that the Mechanical Deck Block selects into the EJECT mode.
(4) Check that the M Slider moves fully in the direction of arrow D. (Fig. 2)
(5) Apply half drop of oil on the shaft of the Mode Output Gear. (Fig. 2)
(6) Install the Mode Output Gear so that the center of the M-switch Assembly Gear and two positioning holes are lined up. (Fig. 4)
(7) Install the stopper washer to the shaft of Mode Output Gear.
(8) Press the M-mode select button of the Mode Selector and select into the LOADING/UNLOADING mode.
(9) Assemble the parts following Removal Steps (1) to (7) in reverse order.

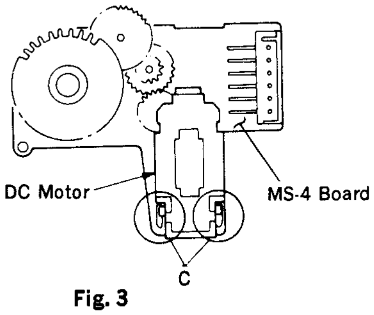


Fig. 3

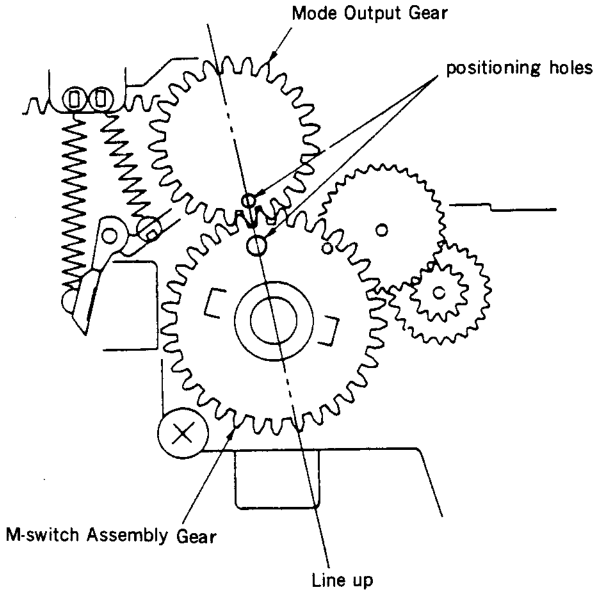


Fig. 4

4-22. REPLACEMENT OF THE M SLIDER

Tool: Mode Selector (Ref. No. J-13)
Sony Oil
Sony Grease

Removal:

(1) Remove the Cassette-up Compartment Assembly referring to Section 2-3.
(2) Remove the Threading Ring Assembly referring to Section 4-4.
(3) Remove the S Reel Table Assembly referring to Section 4-13.
(4) Remove the T Reel Table Assembly referring to Section 4-14.
(5) Remove the Pinch Press Arm Assembly referring to Section 4-15.
(6) Remove the Tension Regulator Arm Assembly referring to Section 4-16.
(7) Remove the Tension Regulator Band Assembly referring to Section 4-17.
(8) Remove the Drive Gear (B) Assembly, LD-1 Board, Lock Slider M Assembly and B Release Arm Assembly referring to Removal Steps (2) to (7) of Section 4-21.
(9) Remove the Tension Regulator Load Arm Assembly referring to Removal Step (11) of Section 4-18.
(10) Remove the tension spring which is hooked to S Main Brake Assembly.
(11) Remove two stopper washers and remove the S Main Brake Assembly and T Main Brake Assembly.
(12) Select the L-mode into $\boxed{\text{LOADING TOP}}$ mode and the M-mode into $\boxed{\text{LOADING/UNLOADING}}$ mode operating the Mode Selector.
(13) Remove a fixing screw and remove Drive Complete Assembly.
(14) Remove the Mode Output Gear referring to Removal Steps (8) and (9) of Section 4-21.
(15) Remove the two tension springs which are hooked to REW Brake Assembly and B Release Slider.
(16) Remove the REW Brake Assembly and remove REW Brake Spacer.
(17) Remove a stopper washer and remove the B Release Slider.
(18) Remove a stopper washer and remove Ring Lock Spring and RL Arm.
(19) Move right side M Slider so that being situated at about 5mm space between fixing shaft and longitudinal hole.
(20) Remove E ring and remove Pinch Press Lever Assembly.
(21) Remove a tension spring and remove Hard Brake S.
(22) Remove a stopper washer and push Mode Arm in the direction of the arrow. Remove the M Slider lifting up the left side of it.

Installation:

(1) Replace the M Slider with a new one and smear grease it. (Fig. 2)
(2) Push the Mode Arm in the ditection of the arrow. Install the M Slider taking care of the part's position and install the stopper washer. (Figs. 1 and 3)
(3) Install the Hard Brake S and hook the tension spring to it.
(4) Smear grease to the Pinch Press Lever Assembly. (Fig. 4)
(5) Apply half drop of oil to the parts under the groove of Pinch Press Lever Assembly's shaft.
(6) Assemble the parts following Removal Steps (16) to (18) and (20) in reverse order.
(7) Hook the tension springs to the REW Brake Assembly and B Release Slider.

Note: Hook the two tension springs as following being careful not to mix them.

- B Release Slider Spring:
  2mm diameter, 0.18mm wire diameter
- REW Brake Assembly Spring:
  1.6mm diameter, 0.12mm wire diameter

(8) Move left side fully the M Slider.

(9) Press the M-mode select button of the Mode Selector and select into the EJECT mode.

(10) Install the Mode Output Gear referring to Instllation Steps (5) to (7) of Section 4-21.

(11) Press the M-mode select button of the Mode Selector and select into the LOADING/UNLOADING mode.

(12) Put the horizontal shaft of the Drive Complete Assembly into the groove of the Upper and Lower Selection Arm with the fixing screw.

(13) Assemble the parts following Removal Steps (1) to (11) in reverse order.

Note: After replacement, carry out the Tape Path Check referring to Section 6-6.

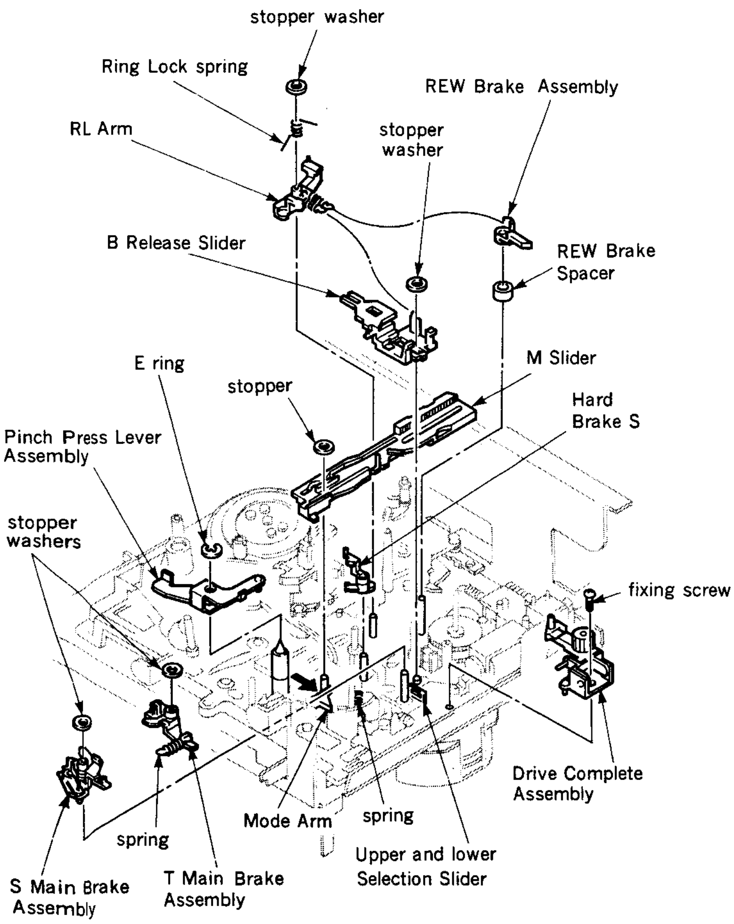

stopper washer
Ring Lock spring
REW Brake Assembly
RL Arm
stopper washer
B Release Slider
REW Brake Spacer
E ring
M Slider
stopper
Hard Brake S
Pinch Press Lever Assembly
stopper washers
fixing screw
Drive Complete Assembly
Mode Arm
spring
spring
Upper and lower Selection Slider
S Main Brake Assembly
T Main Brake Assembly

Fig. 1

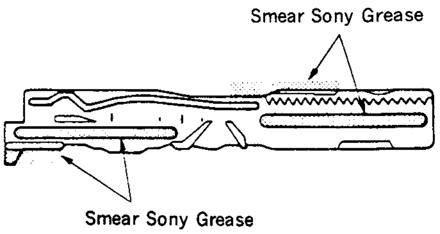

Smear Sony Grease
Smear Sony Grease

Fig. 2

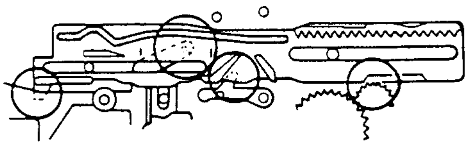


Fig. 3

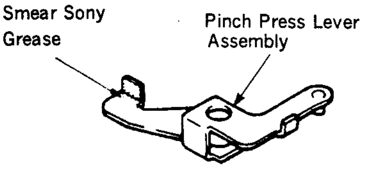

Smear Sony Grease
Pinch Press Lever Assembly

Fig. 4

4-23. INSTALLATION OF BLOCK PLATE ASSEMBLY

If removing Block Plate Assembly, installing procedures are as follows.

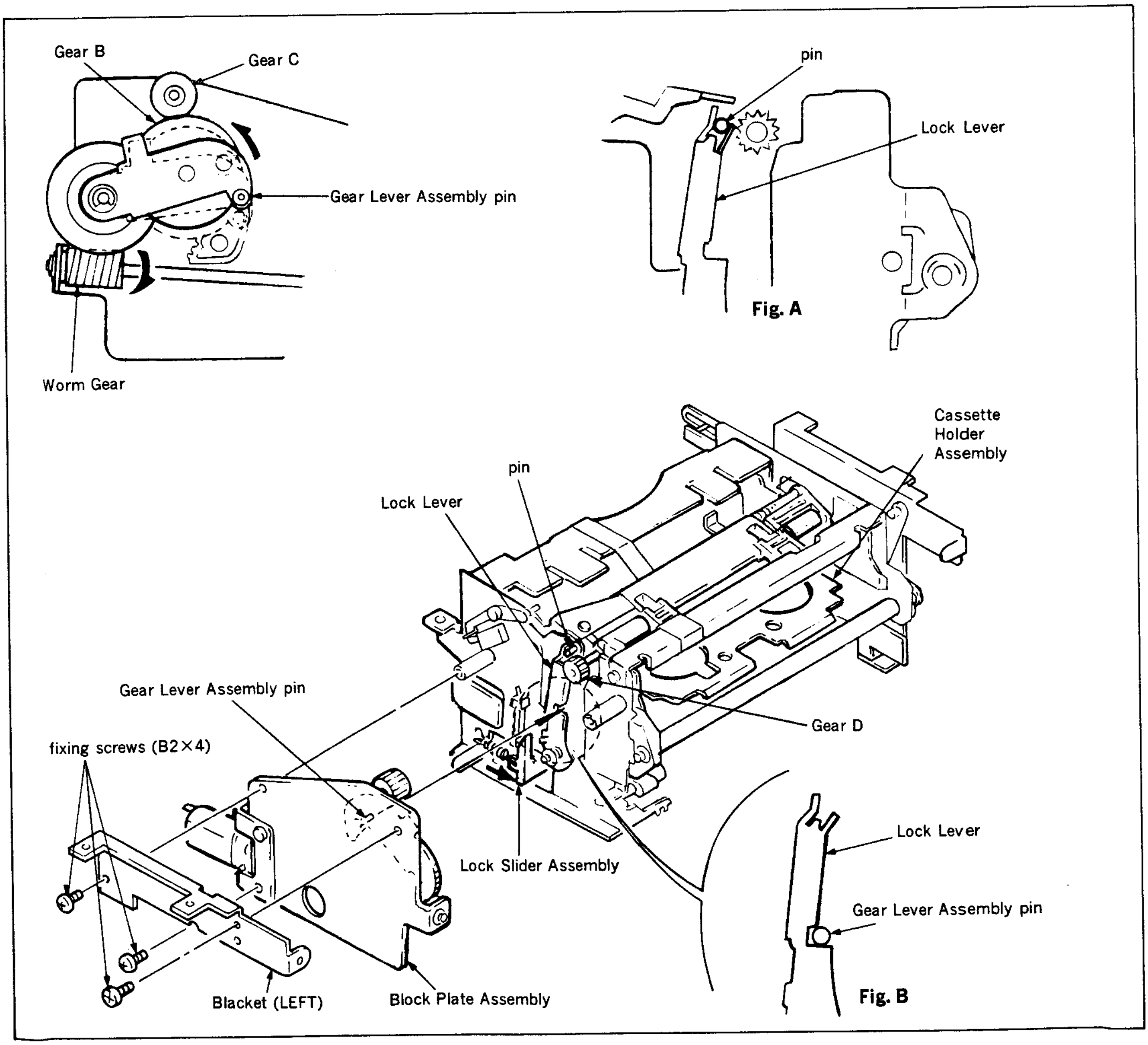
(1) Push Lock Slider Assembly in the direction of the arrow and lift up Cassette Holder.

(2) Check that Lock Lever is situated as shown in fig. A.

(3) Turn Worm Gear in the direction of the arrow and engage Gears B and C.

(4) Install Block Plate Assembly and Bracket (L) with three fixing screws checking the pin of the Gear Lever Assembly is situated at as shown in fig. B.

(5) Check that Gear C and D are engaged.


Gear B
Gear C
Gear Lever Assembly pin
Worm Gear
pin
Lock Lever
Fig. A
Cassette Holder Assembly
pin
Lock Lever
Gear Lever Assembly pin
fixing screws (B2×4)
Gear D
Lock Slider Assembly
Blacket (LEFT)
Block Plate Assembly
Lock Lever
Gear Lever Assembly pin
Fig. B

4-24. PARALLELISM ADJUSTMENT OF CASSETTE HOLDER BLOCK

If the following trouble happen, carry out this adjustment. If inserting or ejecting a cassette, it is caught in the Cassette Holder Assembly or Joint Assembly, and does not move smoothly.

Adjustment procedure:

(1) Open the MB-19 Board referring to Section 2-5-5.

(2) Remove the Cassette-up Compartment Assembly referring to Section 2-3.

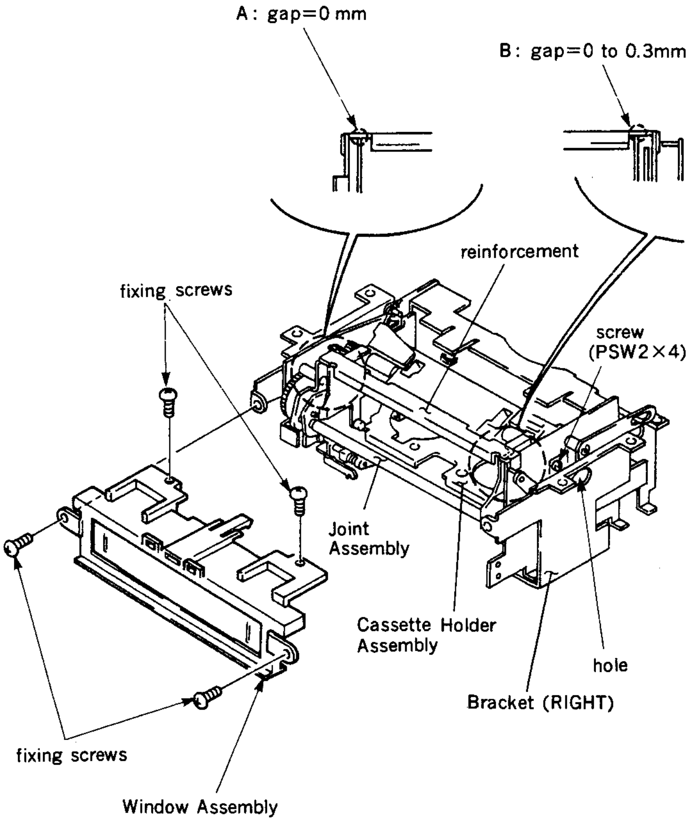
(3) Remove four fixing screws and remove Window Assembly.

(4) Loosen a screw (PSW2 X 4) from the hole of Braket (R).

(5) Push the bottom of the Cassette Holder Assembly against Reinforcement Plate. Adjust the position so that shown at the A and B have no clearance.

(6) Tighten the screw (PSW2 X 4) and smear locking compound to it.

(7) Assemble the parts following Steps (1) to (3) in reverse order.


A: gap=0 mm
B: gap=0 to 0.3mm
reinforcement
fixing screws
screw
(PSW2×4)
Joint
Assembly
Cassette Holder
Assembly
hole
Bracket (RIGHT)
fixing screws
Window Assembly

SECTION 5
TORQUE AND BACK TENSION ADJUSTMENT

Carry out these adjustment except for Section 5-4 after removing the Mechanical Deck Block and Cassette-up Compatment Assembly referring to Sections 2-2 and 2-3.

5-1. CHECK OF MAIN BRAKE TORQUE

5-1-1. S Main Brake Torque

Tool: Mode Selector (Ref. No. J-13)
Tension Meaurement Reel
(Ref. No. J-8)
Dial Tension Gauge (Ref. No. J-6)

Mode: Press the M-mode select button of the Mode Selector and select into the FF/REW mode.

Check Procedure:

(1) Install Tension Measurement Reel on S Reel Table. Install Dial Tension Gauge at the end of string.

(2) Pull out the Dial Tension Gauge in the direction of the arrow. Check that these readings meet the required specifications. (Figs. 1 and 2)

Note: Both S Main Brake and S Soft Brake work into the FF/REW mode.

Adjustment Procedure:

(1) If the readings do not meet the required specifications, replace the S Main Brake of S Reel Table Assembly.

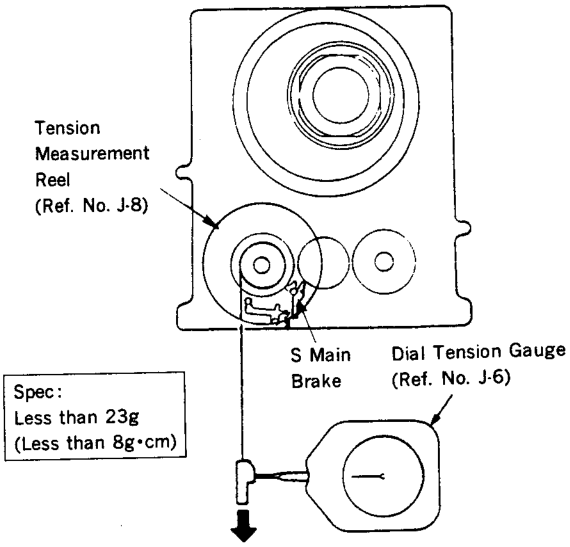

Tension
Measurement
Reel
(Ref. No. J-8)
S Main
Brake
Dial Tension Gauge
(Ref. No. J-6)
Spec:
Less than 23g
(Less than 8g·cm)

Fig. 1

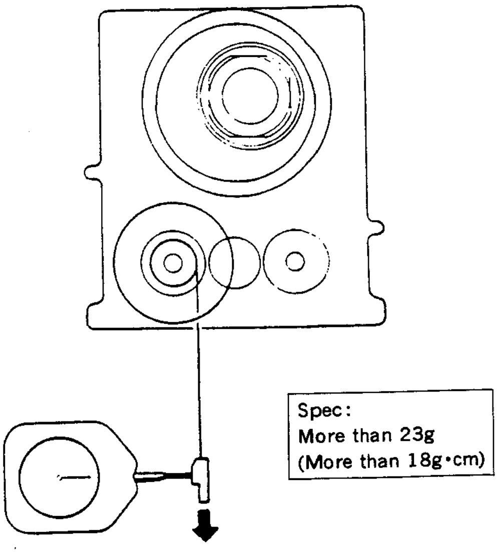

Spec:
More than 23g
(More than 18g·cm)

Fig. 2

5-1-2. T Main Brake Torque

Tool: Mode Selector (Ref. No. J-13)
Tension Measurement Reel
(Ref. No. J-8)
Dial Tension Gauge (Ref. No. J-6)

Mode: Press the M-mode select button of the Mode Selector and select into the FF/REW mode.

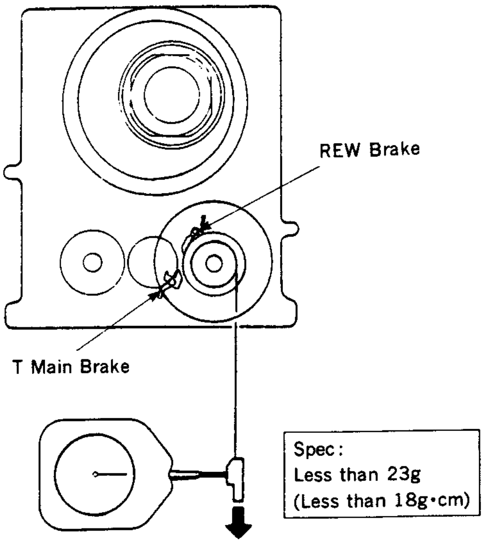
Check Procedure:

(1) Install the Tension Measurement Reel on T Reel Table. Install the Dial Tension Gauge at the end of string.

(2) Pull out the Dial Tension Gauge in the direction of the arrow. Check that these readings meet the required specificaitons. (Figs. 1 and 2)

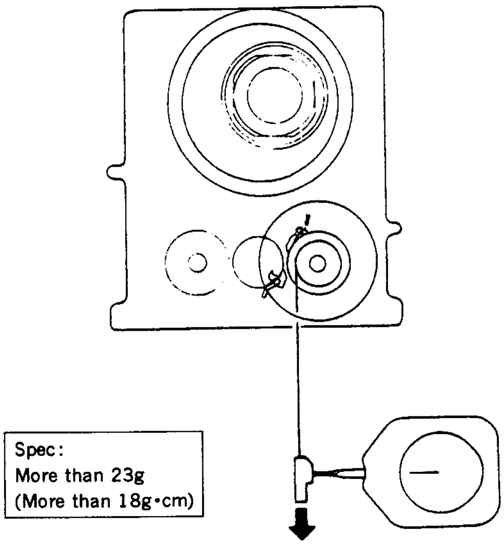
Adjustment Procedure:

(1) If the readings do not meet the required specificaiton, replace T Main Brake or T Side Reel Table Assembly.



Spec:
Less than 23g
(Less than 18g•cm)

Fig. 1



Spec:
More than 23g
(More than 18g•cm)

Fig. 2

5-2. CHECK OF SOFT BRAKE TORQUE

5-2-1. S Side Soft Bake Torque

Tool: Mode Selector (Ref. No. J-13)
Tension Measurement Teel
(Ref. No. J-8)
Dial Tension Gauge (Ref. No. J-6)

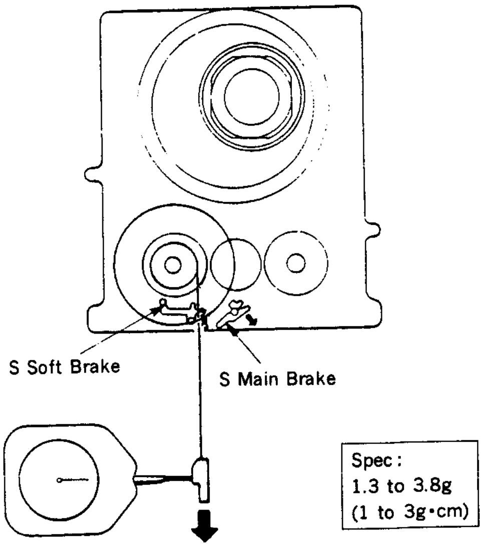
Mode: Press the M-mode select button of the Mode Selector and select into the FF/REW mode.

Check Procedure:

(1) Install the Tension Measurement Reel on the S Reel Table. Install the Dial Tension Gauge at the end of the string.

(2) Release the S Main Brake by means of a hand.

(3) Pull out the Dial Tension Gauge in the direction of the arrow releasing the S Main Brake. Check that the reading meets the required specification. Check that the reading meets the required specification.



Adjustment Procedure:

(1) Adjsut the strength of S Soft Brake Spring by stretching or cutting.

5-2-2. T Side Soft Brake Torque

Tool: Mode Selector (Ref. No. J-13)
Tension Measurement Reel
(Ref. No. J-8)
Dial Tension Gauge (Ref. No. J-6)

Mode: Press the M-mode button of the Mode Selector and select into the RVS mode.

Check Procedure:

(1) Install the Tension Measurement Reel on the T Reel Table. Install the Dial Tension Gauge at the end of string.

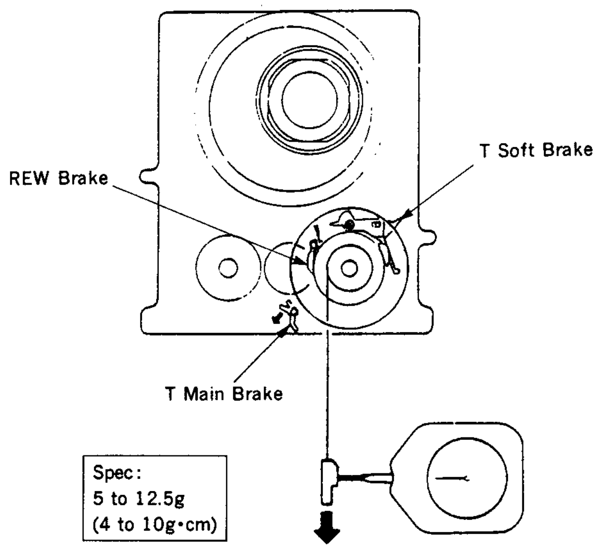
(2) Release the T Main Brake by means of a hand.

(3) Pull out the Dial Tension Gauge in the direction of the arrow releasing the T Main Brake. Check that the reading meets the required specification.
Note: Both T Soft Brake and REW Brake work into the RVS mode.

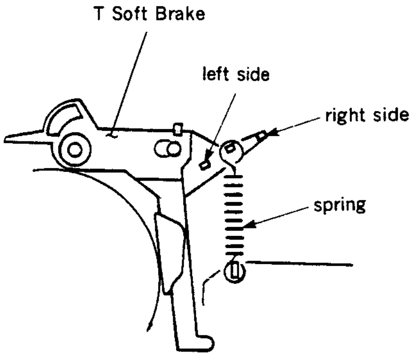
Adjustment Procedure:

(1) Change the position of the tension spring which is hooked to the T Soft Brake.
- More than the specification:
  Hook the left side.
- Less than the specification:
  Hook the right side.

(2) If the reading do not meet the required specification with step (1), replace the T Soft Brake or REW Brake, or both them.



Spec:
5 to 12.5g
(4 to 10g•cm)



5-3. CHECK OF REW BRAKE TORQUE

Tool: Mode Selector (Ref. No. J-6)
Tension Measurement Reel
(Ref. No. J-8)
Dial Tension Gauge (Ref. No. J-6)

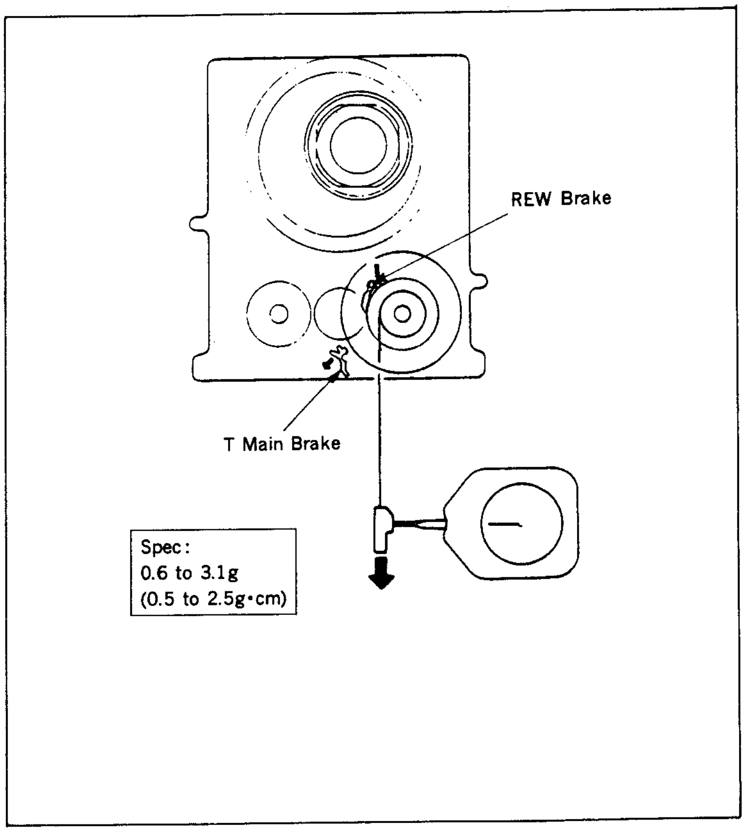
Mode: Press the M-mode select button of the Mode Selector and select into the FF/REW mode.

Check Procedure:

(1) Install the Tension Measurement Reel on the T Reel Table. Install the Dial Tension Gauge at the end of the string.

(2) Release the T Main Brake by means of a hand.

(3) Pull out the Dial Tension Gauge in the direction of the arrow releasing the T Main Brake. Check that the reading meets the required specification.



Adjustment Procedrure:

(1) Replace the REW Brake with a new one, or adjsut the strength of the tension spring by streching or cutting.

5-4. CHECK WITH FWD, RVS, TAKE-UP TORQUE CASSETTE

Tool: FWD, RVS take-up torque cassette
(Ref. No. J-12)

Mode: PLAY mode

Check Procedure:

(1) Insert FWD, RVS take-up torque cassette.

(2) Select into the PLAY mode. Check that the torque reading of the T Reel Table meets the required specification.
Spec. : 9.5 to 15.5 g.cm

(3) Select into the PLAY mode. Check that the torque reading ot the S Reel Table meets the required specification immediately after pressing REW button.
Spec. : 17 to 23 g.cm

Adjustment Procedure:

(1) If the readings do not meet the required specifications, replace each Reel Table Assembly.

5-5. FWD BACK TENSION ADJUSTMENT

Tool: Mode Selector (Ref. No. J-13)
Tension Measurement Reel
(Ref. No. J-7)
Dial Tension Gauge (Ref. No. J-6)

Mode: Press the L-mode select button of the Mode Selector and select into the $\boxed{\text{LOADING END}}$. Press the M-mode select button of the Mode Selector and select into the $\boxed{\text{FWD}}$ mode.

Check Procedure:

(1) Remove the Cassette-up Compartment referring to Section 2-3.

(2) Press the L-mode select button of the Mode Selector and select into the $\boxed{\text{LOADING END}}$ mode. Press the M-mode select button of the Mode Selector and select into the $\boxed{\text{FWD}}$ mode.

(3) Loosen a fixing screw and move Band Adjustment Plate in the direction of arrow A. Check the possible movement range of No. 1 Guide.

(4) Tighten the fixing screw where No. 1 Guide Cap is situated at 1/3 of .

(5) Install the Tension Measurement Reel on the S Reel Table and trail the tape along the No. 1 Guide, No. 2 Guide, No. 3 Guide, IP Roller Guide and Drum.

(6) Install the Dial Tension Gauge at the end of the tape. Pull out the Dial Tension Gauge at the constant speed apporox 15cm/sec. in the direction of arrow B. At same time check that this reading meets the required specification.
Spec. : 12 to 14 g.cm

Adjustment Procedure:

(1) If the reading do not meet the required specification, change the position of the tension spring which is hooked to the Tension Regulator Spring Hook Assembly.
- More than the specification:
  the direction of arrow C
- Less than the specification:
  the direction of arrow D

Note: If replacing the parts as follows, adjust the FWD Back Tension Adjustment.
- Tension Regulator Band Assembly
- S Reel Table Assembly
- Entrance Guide (P) Assembly

If replacing the parts, adjust the FWD Back Tension after carrying out the free running into the FWD mode for 2 minutes.

Adjustment Procedure:

(1) Install the Cassette-up Compartment Assembly with Removal Steps of Section 2-3 in reverse order.

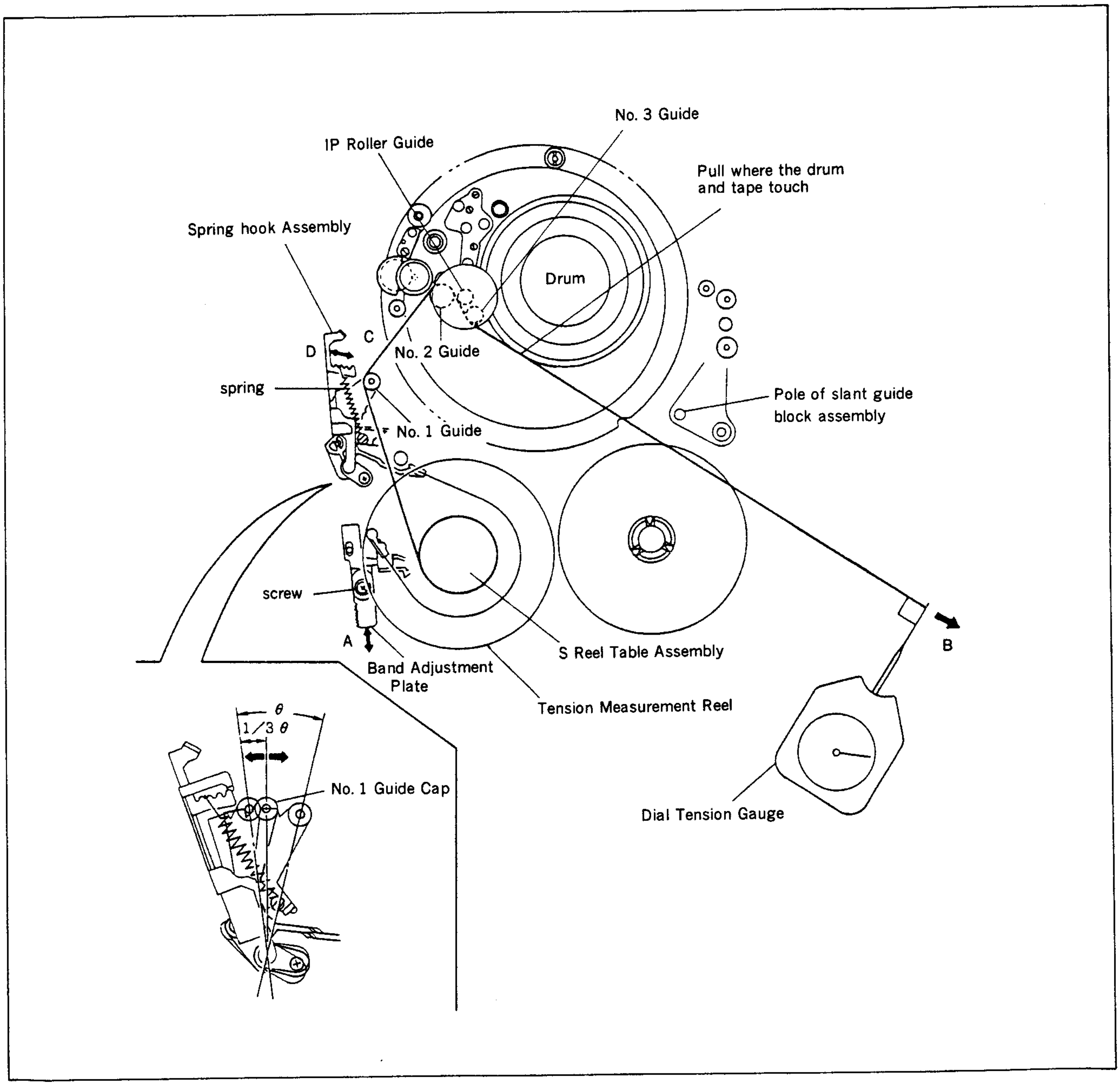
(2) Install the Mechanical Deck Block with Removal Steps of Section 2-2 in reverse order.

(3) Insert a cassette tape in the unit and carry out the FWD running for 2 minutes.

(4) Eject the casette tape.

(5) Remove the Mechanical Deck referring to Section 2-2.

(6) Carry out the FWD Back Tension Adjustment referring to Section 5-5.


No. 3 Guide
IP Roller Guide
Pull where the drum and tape touch
Spring hook Assembly
Drum
C
D
No. 2 Guide
spring
Pole of slant guide block assembly
No. 1 Guide
screw
A
S Reel Table Assembly
B
Band Adjustment Plate
Tension Measurement Reel
θ
1/3 θ
No. 1 Guide Cap
Dial Tension Gauge

SECTION 6
TAPE PATH ADJUSTMENT

- After check that the Electrical Adjustments (Sections 7 through 10) are completed, carry out this adjustment.

Alignment Information

Track Shift Tool

The 8 mm Video System employs a high precision tracking ATF (Auto Track Finding) system which instantaneously controls the tape running speed by means of four different pilot signals. Because of this a Tracking Adjustment Knob is unnecessary and it is possible to track with accuracy. On the other hand adjustment of the Tape Path System was difficult to achieve using the ATF system. It was impossible to adjust it perfectly because the ATF system automatically corrected even if a small amount of miss-tracking occurred. The Track Shift Tool (Ref. No. J-14) is used in the adjustment of the Tape Path System. The Track Shift Tool can forcibly operate the ATF system and adjust easily the Tape Path System by setting the tracking amout (Track Shift) manually.

6-1. CONNECTION OF TRACK SHIFT TOOL

Use connection cords (Ref. Nos. J-15 and J-16) for connection. Connect the Track Shift Tool to the unit as shown in fig. 1.

- RF/SWP connector ...
  to CN004 on the FR-40 Board
- CTL connector ...
  to CN906 on the SE-10 Board

(Please refer to Operation Manual of the Track Shift Tool for details.)

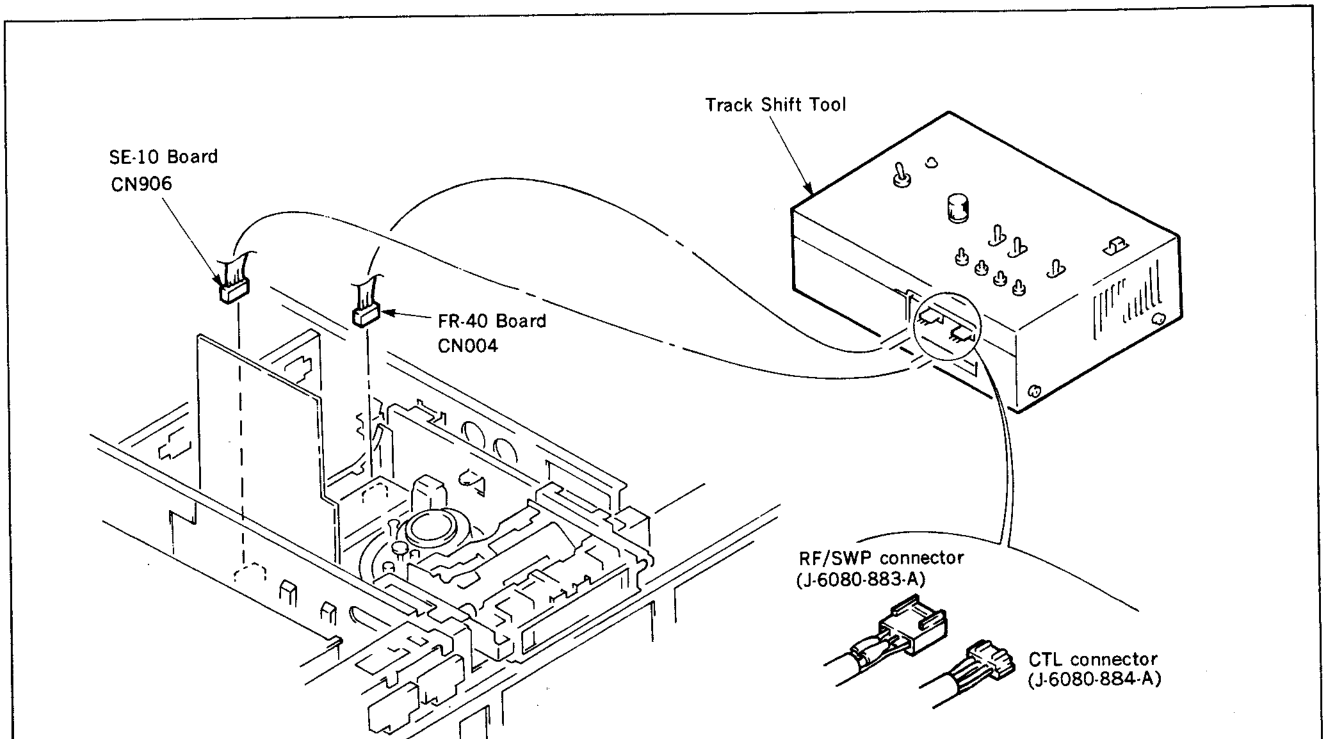
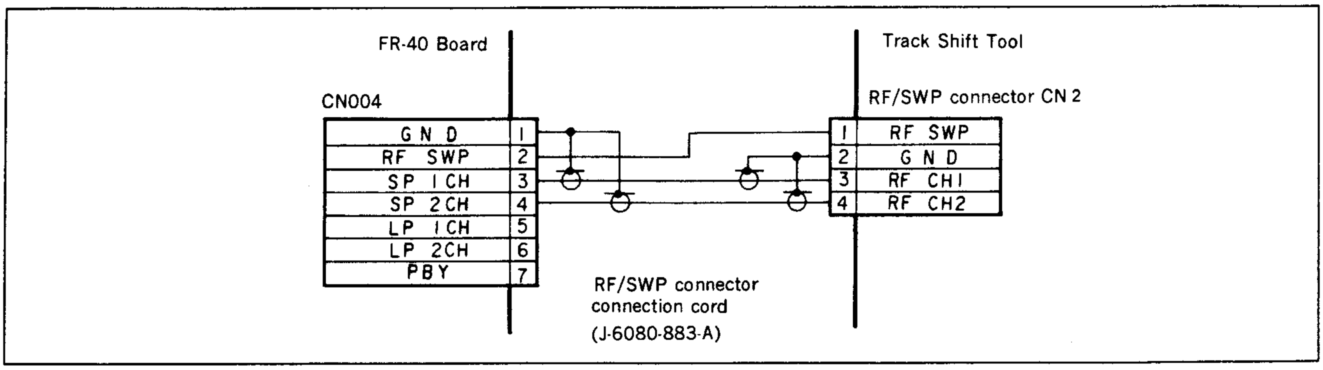


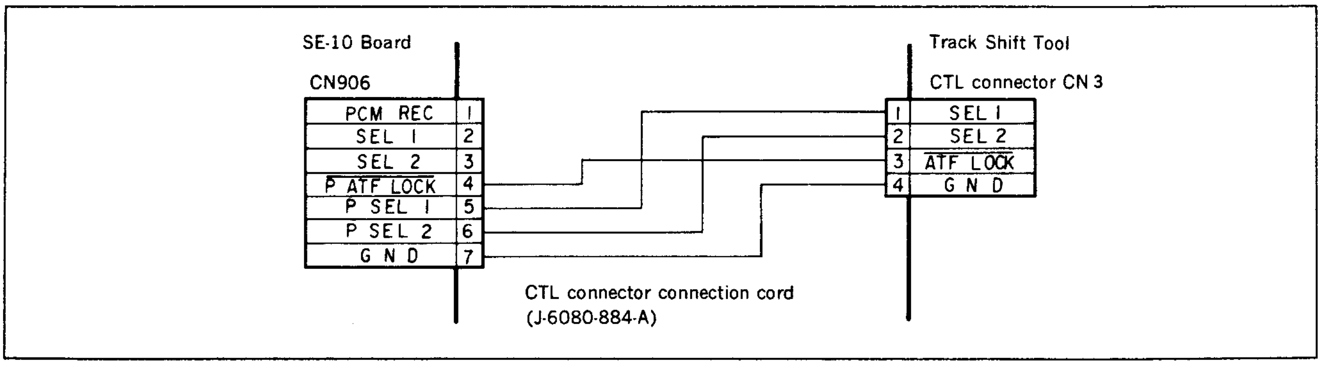
Fig. 1

[Designated Connecting Cord]

- RF/SWP connector connection cord
  (Part No. J-6080-883-A)


FR-40 Board
CN004
G N D 1
RF SWP 2
SP 1CH 3
SP 2CH 4
LP 1CH 5
LP 2CH 6
PBY 7
Track Shift Tool
RF/SWP connector CN 2
1 RF SWP
2 G N D
3 RF CH1
4 RF CH2
RF/SWP connector connection cord
(J-6080-883-A)

- CTL connector connection cord
  (Part No. J-6080-884-A)


SE-10 Board
CN906
PCM REC 1
SEL 1 2
SEL 2 3
P ATF LOCK 4
P SEL 1 5
P SEL 2 6
G N D 7
Track Shift Tool
CTL connector CN 3
1 SEL 1
2 SEL 2
3 ATF LOCK
4 G N D
CTL connector connection cord
(J-6080-884-A)

[Setting of the Switches]

- SEL switch
  If carrying out the track shift, turn the switch to ON. If turning to OFF, the unit side will operate by itself.
- PATTERN swich
  Set to EV side.
- ATF ADJ
  Set to OFF side.

If adjusting EVO-9800, the other switches do not used.

6-2. PREPARATION FOR ADJUSTMENT

Tools: Track Shift Tool (Ref. No. J-14)
RF/SWP connector (Ref. No. J-15)
CTL connector (Ref. No. J-16)
Oscilloscope
Alignment tape for tracking
(WR5-1NP) (Ref. No. J-5)

(1) Clean the tape path surface on Tape Guides, Drum, Capstan Shaft and Pinch Roller.

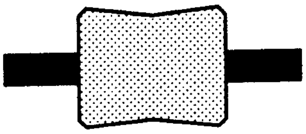
(2) Connect the oscilloscope as follows.
1CH: CH2 check pin of the Track Shift Tool
EXT TRIG:RF SWP check pin of the Track Shift Tool

(3)

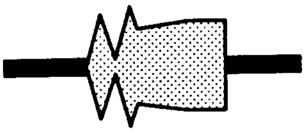
1. Turn the SEL switch of the Track Shift Tool to OFF. Play back the alignment tape. Check that the RF waveform at the corners is flat. If not, adjust as follows. (Fig. 1 a)
2. Turn the SEL swtich of the Track Shift to ON. Check that the RF waveform the left hand side situated at as shown in fig. 1 d. If not, adjust as follows.

In the case of the RF waveform at the left hand side is not flat. (Fig. 1 b)
... Carry out Tape At The Left Hand Side Adjustment referring to Section 6-4.

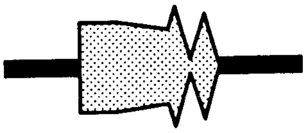
In the case of the RF waveform at the right hand side does not meet the Steps 1 and 2.
... Carry out Tape At The Right Hand Side Adjustment referring to Seciton 6-5.



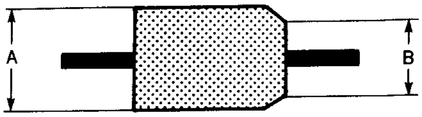
ⓐNormal



ⓑEntrance side is defective.



ⓒExit Side is defective.



$\frac{5}{6}A \geqq B \geqq \frac{3}{4}A$

ⓓ

Fig. 1

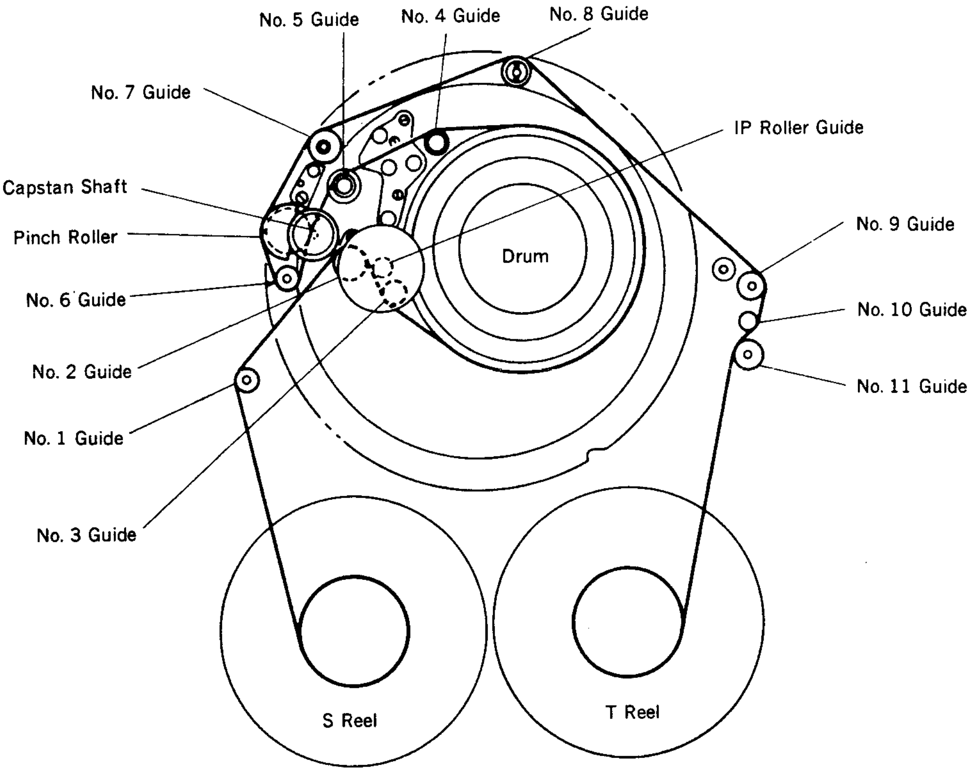
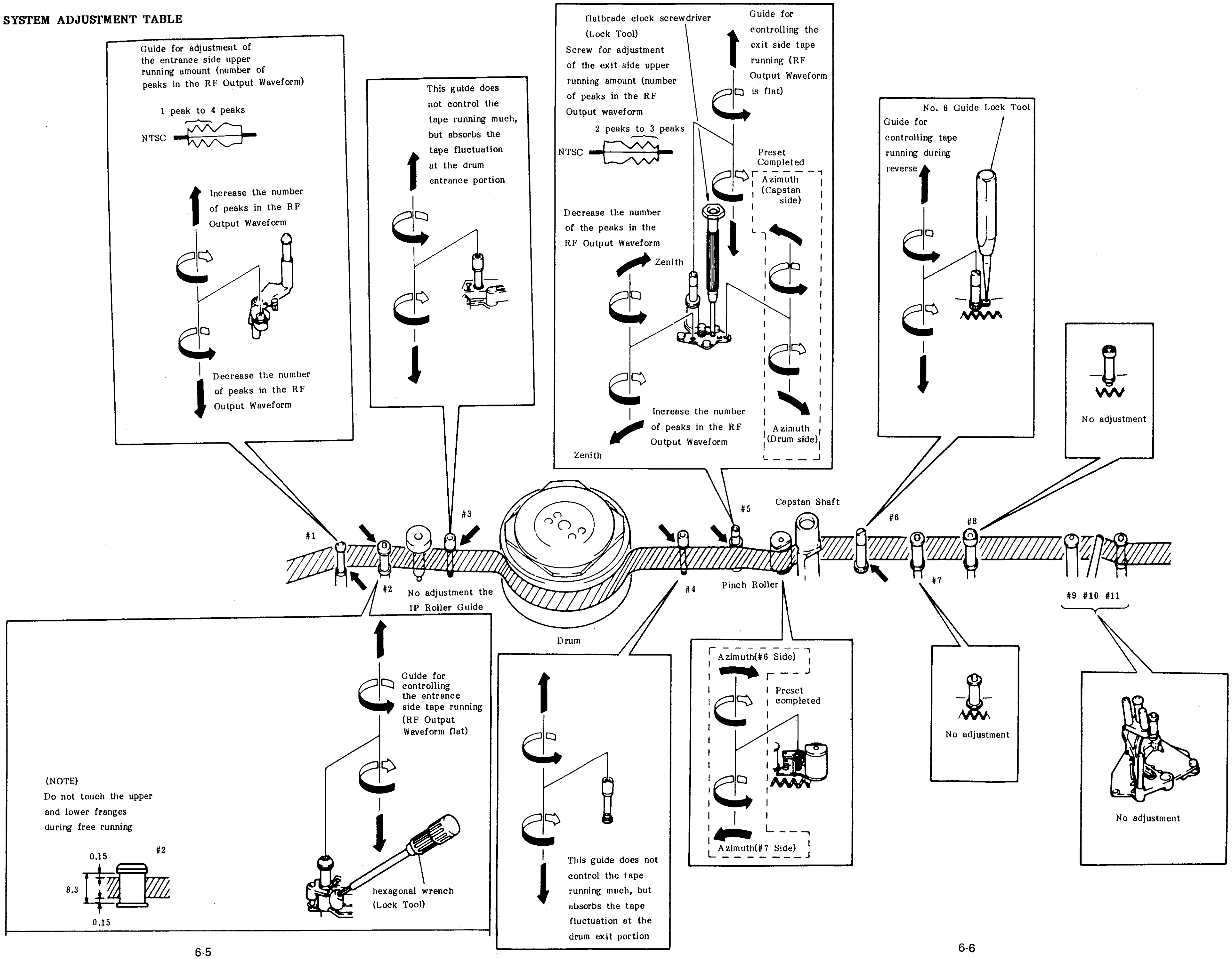

No. 5 Guide
No. 4 Guide
No. 8 Guide
No. 7 Guide
IP Roller Guide
Capstan Shaft
Pinch Roller
No. 9 Guide
Drum
No. 6 Guide
No. 10 Guide
No. 2 Guide
No. 11 Guide
No. 1 Guide
No. 3 Guide
S Reel
T Reel

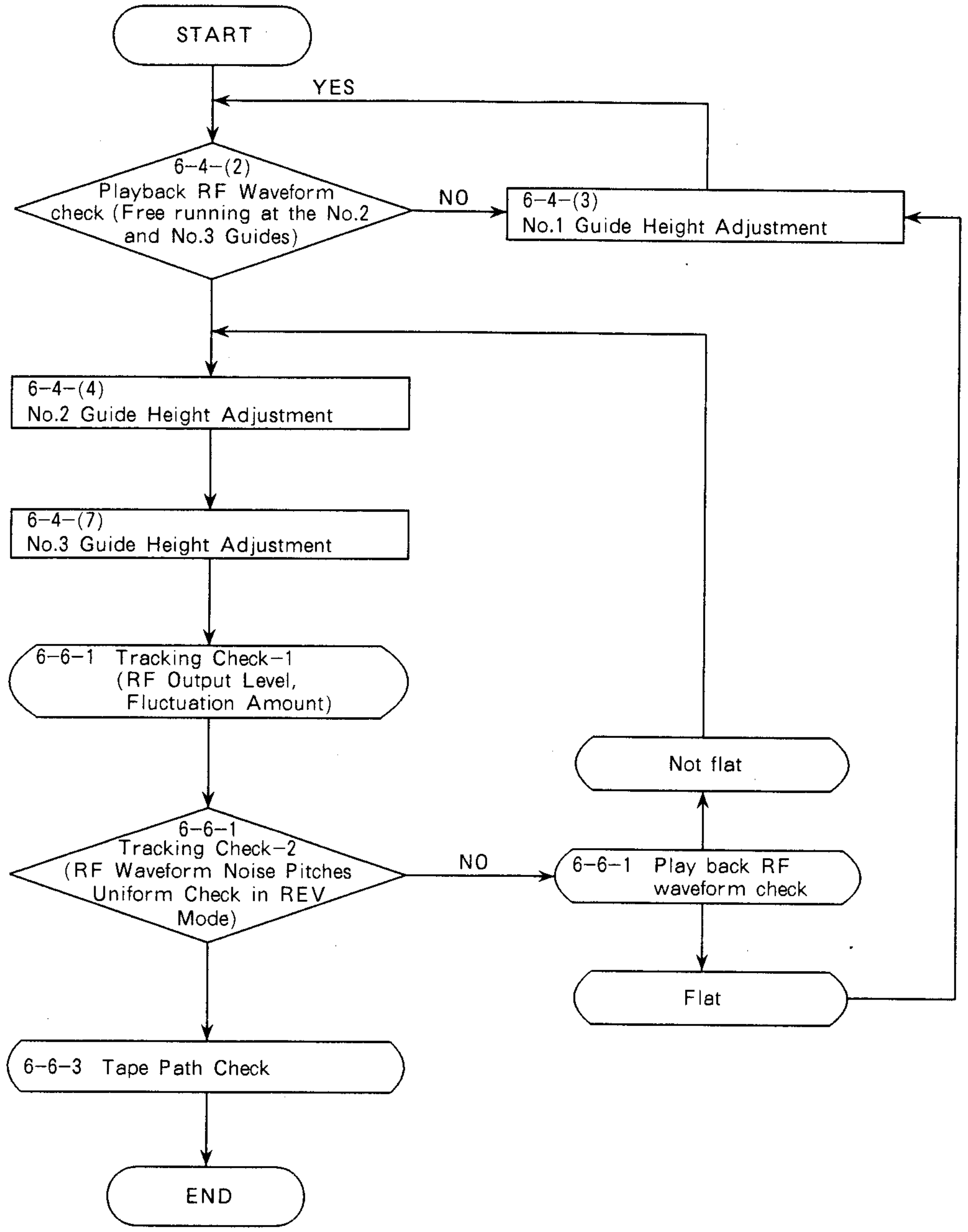
Fig. 2 Tape Guide Arrangement Diagram

6-3. TAPE PATH SYSTEM ADJUSTMENT TABLE


Guide for adjustment of the entrance side upper running amount (number of peaks in the RF Output Waveform)
1 peak to 4 peaks
NTSC
Increase the number of peaks in the RF Output Waveform
Decrease the number of peaks in the RF Output Waveform
This guide does not control the tape running much, but absorbs the tape fluctuation at the drum entrance portion
flatbrade clock screwdriver (Lock Tool)
Screw for adjustment of the exit side upper running amount (number of peaks in the RF Output waveform
2 peaks to 3 peaks
NTSC
Decrease the number of the peaks in the RF Output Waveform
Zenith
Increase the number of peaks in the RF Output Waveform
Zenith
Guide for controlling the exit side tape running (RF Output Waveform is flat)
Preset Completed
Azimuth (Capstan side)
Azimuth (Drum side)
No. 6 Guide Lock Tool
Guide for controlling tape running during reverse
No adjustment
#1
#2
#3
No adjustment the IP Roller Guide
Drum
#4
#5
Capstan Shaft
Pinch Roller
#6
#7
#8
#9 #10 #11
(NOTE)
Do not touch the upper and lower franges during free running
#2
0.15
8.3
0.15
Guide for controlling the entrance side tape running (RF Output Waveform flat)
hexagonal wrench (Lock Tool)
This guide does not control the tape running much, but absorbs the tape fluctuation at the drum exit portion
Azimuth(#6 Side)
Preset completed
Azimuth(#7 Side)
No adjustment
No adjustment

6-4. Tape Entrance Side Adjustment

Flow Chart of Adjustment


START
YES
6-4-(2)
Playback RF Waveform check (Free running at the No.2 and No.3 Guides)
NO
6-4-(3)
No.1 Guide Height Adjustment
6-4-(4)
No.2 Guide Height Adjustment
6-4-(7)
No.3 Guide Height Adjustment
6-6-1 Tracking Check-1 (RF Output Level, Fluctuation Amount)
Not flat
6-6-1
Tracking Check-2
(RF Waveform Noise Pitches Uniform Check in REV Mode)
NO
6-6-1 Play back RF waveform check
Flat
6-6-3 Tape Path Check
END

Mode: Play back the alignment tape

Tool: Alignment tape for tracking
(WR5-1NP) (Ref. No. J-5)
Oscilloscope
Track Shift Tool (Ref. No. J-14)
RF/SWP connector (Ref. No. J-15)
CTL connector (Ref. No. J-16)
Hexagonal screwdriver
(0.89mm across flat) (Ref. No J-17)
Small adjustment mirror
(Ref. No. J-4)

Preparation:

(1) Remove the Top Plate referring to Section 2-1.

(2) Open the MB-19 Board referring to Section 2-5-5.

(3) Connect the Track Shift Tool and oscilloscope to the unit referring to Sections 6-1 and 6-2.

(4) Play back the alignment tape.

Procedure:

(1) Remove the Fly Wheel referring to Section 4-1.

(2) Loosen No. 2 Guide Lock Screw. Turn the No. 2 and No. 3 Guides counterclockwise to free the tape path at the entrance side. (Figs. 1 and 2)

Note: The space between upper and lower flanges of the No. 2 Guide is narrow. At same time check that the tape is not touch the upper and lower flanges. If loosen the No. 2 Guide too much, the tape will touch the lower flange and the RF waveform at the left hand side will be over the original free waveform.

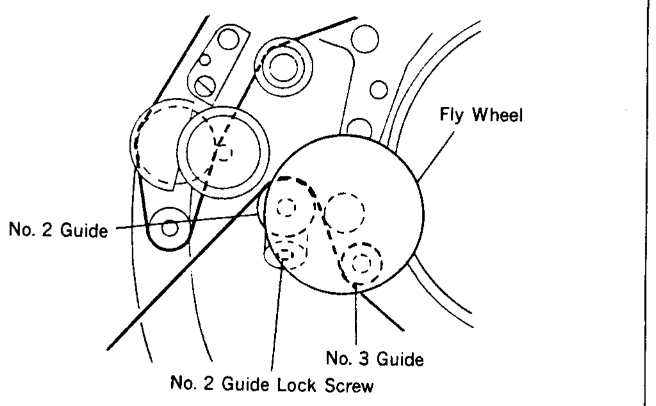

Fly Wheel
No. 2 Guide
No. 3 Guide
No. 2 Guide Lock Screw

Fig. 1

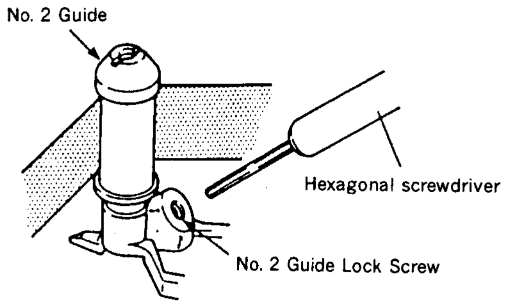

No. 2 Guide
Hexagonal screwdriver
No. 2 Guide Lock Screw

Fig. 2

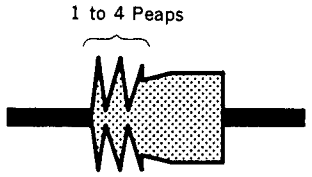


Fig. 3

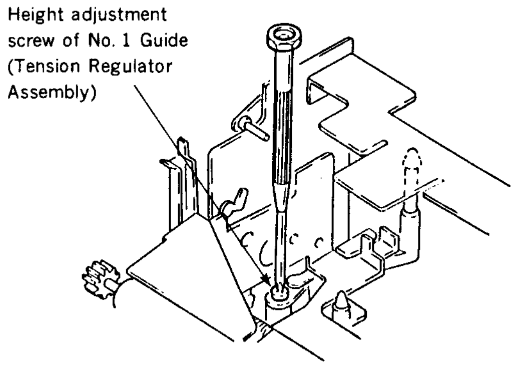

Height adjustment screw of No. 1 Guide (Tension Regulator Assembly)

Fig. 4

(3) Check that the RF waveform at the left hand side has 1 to 4 peaks in this condition. If not, adjust as follows. (Fig. 3)

Less than 1 peak

Turn and adjust the height adjustment screw of the No. 1 Guide (Tension Regulator Arm Assembly) clockwise 90 degrees step. (Fig. 4)

More than 4 peaks

Turn and aqjust the height adjustment screw counterclockwise 90 degrees step. (Fig. 4)

(4) Turn slowly the No. 2 Guide clockwise so that the waveform at the left hand side should be flatten. (Fig. 5)

Note: Do not turn the No. 2 Guide too much.

(5) Turn the SEL switch of the Track Shift Tool to ON. Turn the Track Shift Knob and set the amplitude of the RF waveform to 2/3 position. (Fig. 6)

(6) Turn the No. 2 Guide and raise the left hand side waveform sightly. (Fig. 7)

(7) Should be flatten the waveform by means of a the No. 3 Guide. (Fig. 8)

(8) Tighten the locking screw of the No. 2 Guide. (Fig. 2)

(9) After adjustment, carry out the Check After Adjustment referring to Section 6-6.

(10) Smear locking compound to the No. 1 Guide Height Adjustment Screw and top position of the No. 3 Guide Adjustment.

(11) Install the Fly Wheel referring to Section 4-1.

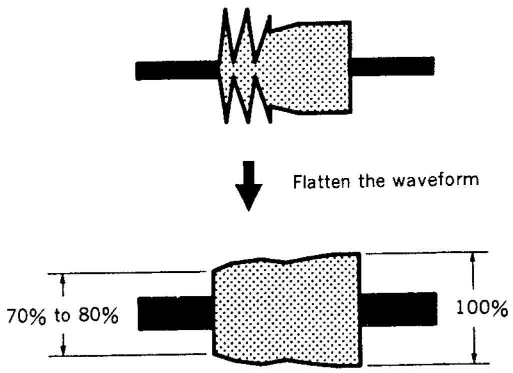


Fig. 5

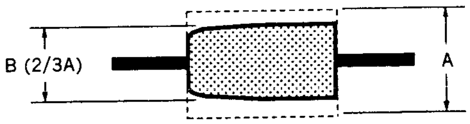
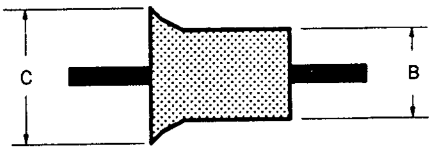


Fig. 6



C=1.15B to 1.25B

Fig. 7

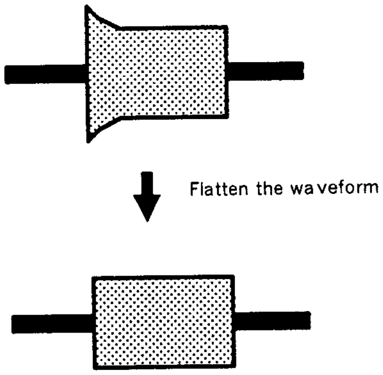
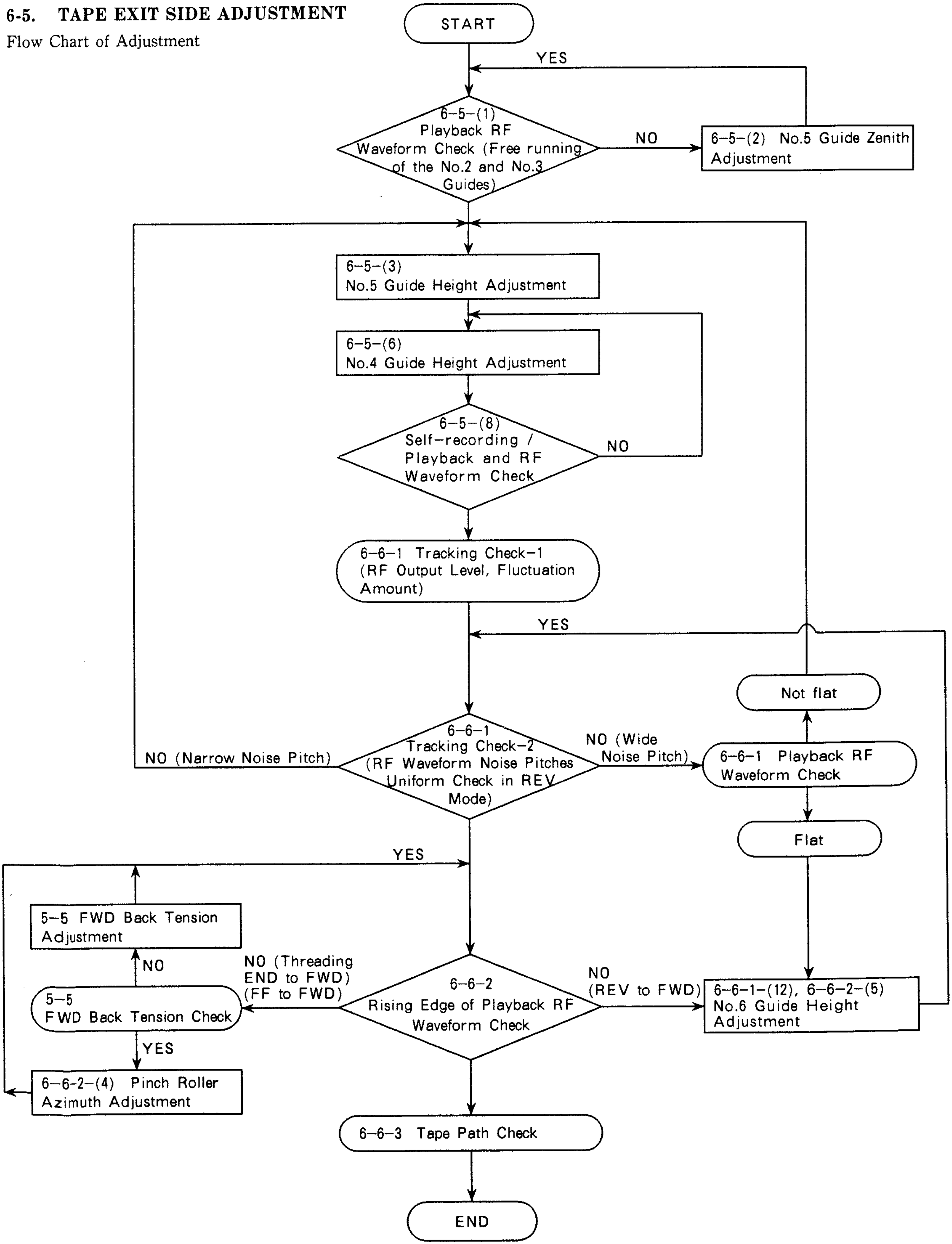


Fig. 8

6-5. TAPE EXIT SIDE ADJUSTMENT

Flow Chart of Adjustment


START
YES
6–5–(1)
Playback RF
Waveform Check (Free running of the No.2 and No.3 Guides)
NO
6–5–(2) No.5 Guide Zenith Adjustment
6–5–(3)
No.5 Guide Height Adjustment
6–5–(6)
No.4 Guide Height Adjustment
6–5–(8)
Self–recording / Playback and RF Waveform Check
NO
6–6–1 Tracking Check–1
(RF Output Level, Fluctuation Amount)
YES
Not flat
6–6–1
Tracking Check–2
(RF Waveform Noise Pitches Uniform Check in REV Mode)
NO (Narrow Noise Pitch)
NO (Wide Noise Pitch)
6–6–1 Playback RF Waveform Check
Flat
YES
5–5 FWD Back Tension Adjustment
NO
NO (Threading END to FWD) (FF to FWD)
5–5
FWD Back Tension Check
YES
6–6–2–(4) Pinch Roller Azimuth Adjustment
6–6–2
Rising Edge of Playback RF Waveform Check
NO
(REV to FWD)
6–6–1–(12), 6–6–2–(5)
No.6 Guide Height Adjustment
6–6–3 Tape Path Check
END

Mode: Play back the alignment tape

Tool: Alignment tape for tracking
(WR5-1NP) (Ref. No. J-5)
Oscilloscope
Track Shift Tool (Ref. No. J-14)
RF/SWP connector (Ref. No. J-15)
CTL connector (Ref. No. J-16)
Hexagonal screwdreiver (across flat has 0.89 mm) (Ref. No. J-17)
Small adjustment mirror (Ref. No. J-4)

Preparation:

(1) Open the Top Panel referring to Section 2-1.
(2) Open the MB-19 Board referring to Section 2-4-1.
(3) Connect the Track Shift Tool and oscilloscope to the unit referring to Sections 6-1 and 6-2.
(4) Play back the alignment tape.

Procedure:

(1) Turn No. 4 and No. 5 Guides counterclockwise to free the tape path at the right hand side. (Fig. 1)

Note: If the No. 5 Guide nut can not loosen because of locking compound, dissolve it by means of alcohol. Check that the tape does not touch the lower flange of the No. 5 Guide into free running.

(2) Check that the RF waveform at the right hand side has 2 to 3 peaks in this condition. If not, adjust as follows. (Fig. 2)

Turn and loosen the lock screw counterclockwise.

Less than 2 peaks

Turn and adjust slowly zenith screw clockwise 45 degrees step.

More than 3 peaks

Turn and adjust slowly the zenith screw of the No. 5 Guide counterclockwise 45 degrees step. Tighten the lock screw clockwise. (Fig. 1)

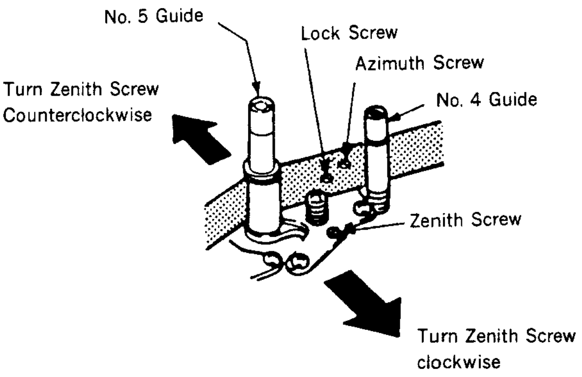

No. 5 Guide
Lock Screw
Azimuth Screw
Turn Zenith Screw Counterclockwise
No. 4 Guide
Zenith Screw
Turn Zenith Screw clockwise

Fig. 1

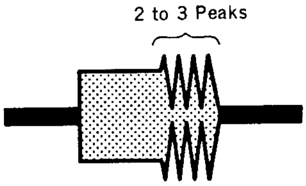


Fig. 2

Note: If tighten the lock screw too much, the waveform will change. Tighten suitably the lock screw. Do not turn the azimuth screws of the No. 5 Guide.

(3) Turn the No. 5 Guide clockwise and should be flatten the RF waveform at the right hand side. (Fig. 3)

Note: The waveform reaction is slow against the nut rotation. Turn the nut more after check that the waveform variation is stabilized.

(4) Turn the SEL switch of the Track Shift Tool to ON. Turn the Track Shift Knob and set the amplitude of the RF waveform to 2/3 position. (Fig. 4)

(5) Turn the No. 5 Guide and raise the right hand side waveform sightly. (Fig. 5)

(6) Turn the No. 4 Guide and should be flatten the waveform.

(7) Eject the alignment tape.

(8) Carry out self-recording/playback by means of a cassette tape (E6-120) and check the RF waveform.

1. Make a recording with no signal to the cassette tape. Check the SP and Hi8 of the indicator section of the front panel are lighting in to this mode.
2. Play back the cassette tape. Check that the RF waveform (CH1 and CH2) at the right hand side meet the specification as shown in fig. 7. If not, adjustment the height of the No. 4 Guide within the specification as shown in fig. 6. Carry out the Steps 1 and 2. Check that it meet the specification as shown in fig. 7.

(9) After adjustment, carry out the Check After Adjustment referring to Section 6-6.

(10) Smear locking compound to the lock screw, zenith screw and adjsutment nuts of the No. 4 Guide and No. 5 Guide.

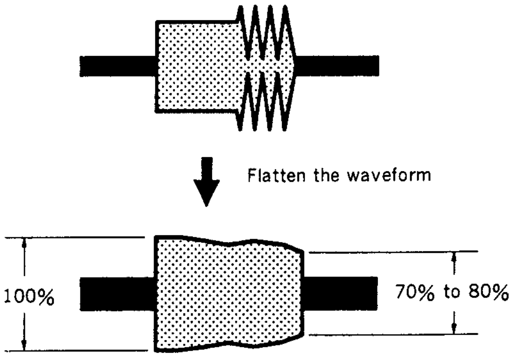


Fig. 3

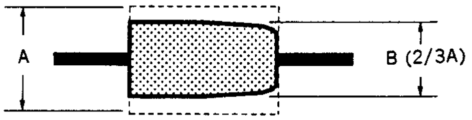
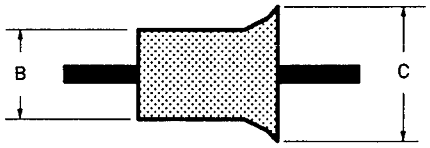
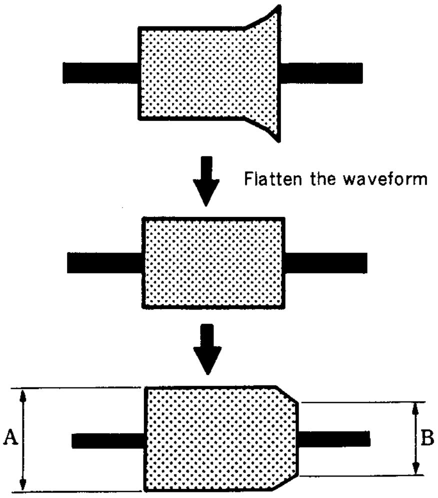


Fig. 4



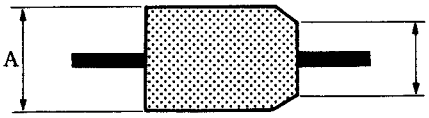
C=1.15B to 1.25B

Fig. 5



$\frac{5}{6}A \geqq B \geqq \frac{3}{4}A$

Fig. 6



$B \geqq \frac{3}{4}A$

Fig. 7

6-6. CHECK AFTER ADJUSTMENT

Tool: No. 6 Guide Lock Tool
(Ref. No. J-10)
Alignment tape for tracking
(WR5-1NP) (Ref. No. J-5)

1. Video Tracking Check

(1) Play back the alignment tape.

(2) Turn the SEL switch of the Track Shift Tool to ON. Turn the Track Shift Knob and set the amplitude of the RF waveform to 2/3 position. (Fig. 1)

(3) Check that the amplitude minimum value (E MIN) of the RF waveform is more than 75% of maximum value (E MAX). (Fig. 2)

(4) Check that the fluctuation amount of the RF waveform at corners meet the reguired specification as shown in fig. 3.

(5) Turn the SEL switch of the Track Shift Tool to OFF.

(6) Select into the REV mode and check that the noise pitches of the waveform are uniform. (Fig. 4) If not, adjust as follows.

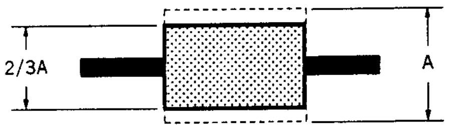
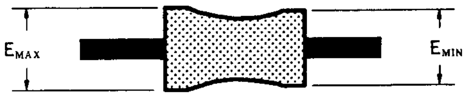
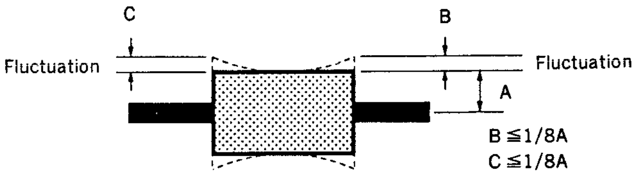


Fig. 1



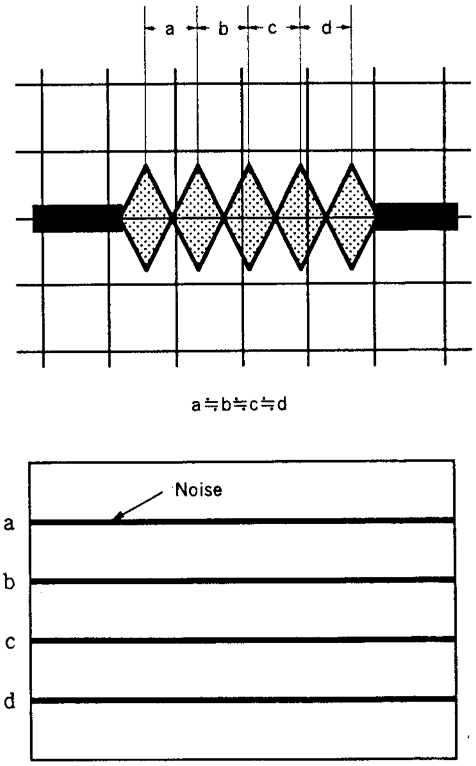
$\frac{E_{MIN}}{E_{MAX}} \geqq 75\%$

Fig. 2



$B \leqq 1/8A$
$C \leqq 1/8A$

Fig. 3



a≒b≒c≒d

Screen

Fig. 4

In the case of the Noise pitch is narrow at the left hand side (upper of screen). (Fig. 5)

(7) Check that the RF waveform should be flat into the PLAY mode.

(8) Carry out the height adjustment of the No. 1 Guide referring to Section 6-4.

Note: After adjustment, perform the Tracking Check referring to Section 6-6-1.

In the case of the RF waveform is not flat.

(9) Carry out the height adjustment of the No. 2 and No. 3 Guides referring to Section 6-4.

Note: After adjustment, carry out the Tracking Check referring to Section 6-6-1.

In the case of the noise pitch is narrow at the right side (lower of screen). (Fig. 6)

(10) Select into the PLAY mode and carry our the height adjustment of the No. 4 and No. 5 Guides referring to Section 6-5. After adjustment, carry out the Tracking Check referring to Section 6-6-1. Check that it meets the required specification.

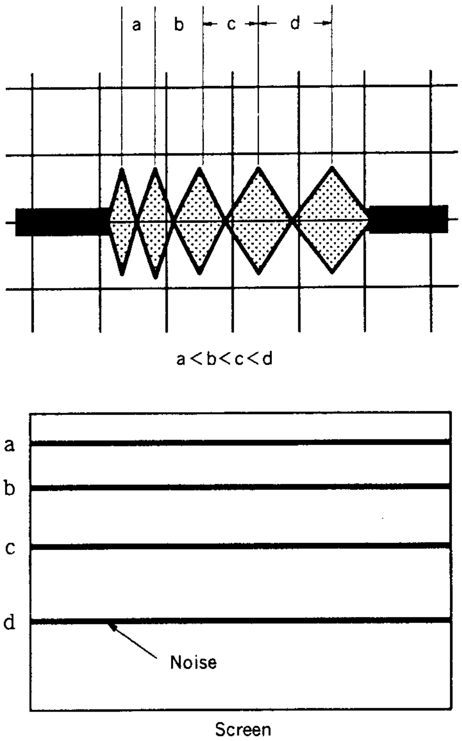


Fig. 5

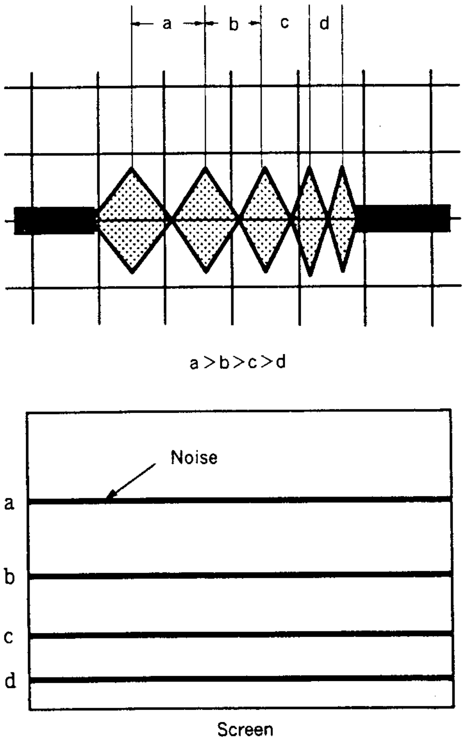


Fig. 6

In the case of the noise pitch is wide at the right hand side (lower of screen). (Fig. 7)

(11) Select into the PLAY mode and check that the RF waveform should be flat.

(12) Turn and loosen Guide Lower Gear counterclockwise by means of a No. 6 Guide Lock Tool. (Fig. 8)

(13) Turn No. 6 Guide and carry out the height adjustment.

Note: If the No. 6 Guide is raised too much, the wrinkles may occur between the Capstan Shaft and No. 5 Guide shown at the A. Check that the wrinkes does not occur. (Fig. 9)

(14) Turn and lock the Guide Lower Gear clockwise by means of the No. 6 Guide Lock Tool. Turn the Guide Lower Gear more about 10 degrees after knocking it against the lower flange of the No. 6 Guide.

Note: After adjustment, carry out the Tracking Check referring to Section 6-6-1.

In the case of the waveform is not flat.

(15) Carry out the height adjustment of the No. 4 and No. 5 Guides referring to Section 6-5.

Note: After adjustment, Carry out the Tracking Check referring to Section 6-6-1.

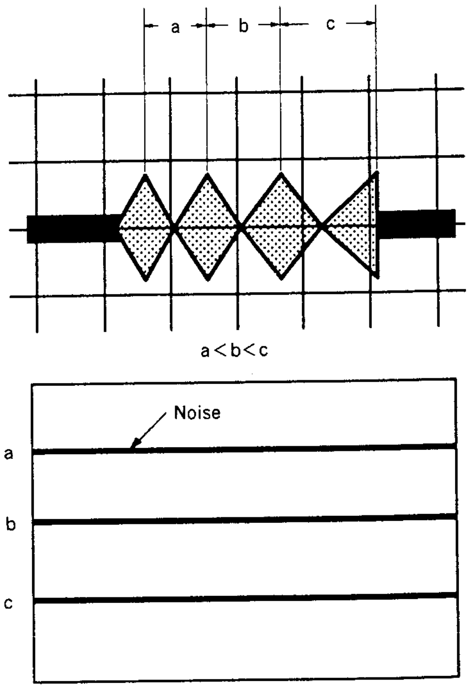


Fig. 7

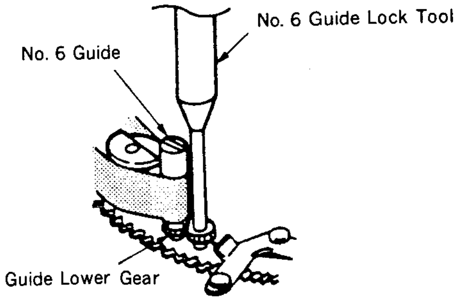


Fig. 8

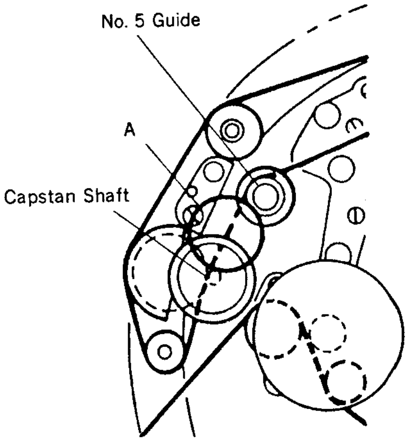


Fig. 9

2. Rising Edge of Waveform Check

(1) Check that the RF waveform rises horizontally (flat waveform) into playback after threading is completed after CUE/REV or FF mode. If the RF waveform do not rise horizontally (flat waveform), adjust as follows.

In case of the noise occurs at the right hand side (lower of screen) into the playback rising edge after CUE/REV of FF mode. (Fig. 11)

(2) Check that the FWD Back Tension is not too low.

In the case of the FWD Back Tension is too low.

(3) Adjust the FWD Back Tension Adjustment referring to Section 5-5.

In the case of the FWD Back Tension is normal.

(4) Turn the azimuth screw of the Pinch Roller clockwise about 5 degrees step adjusting the playback rising edge.

In case of the noise occurs at the right hand side (lower of screen) into the playback rising edge after REV mode. (Fig. 11)

(5) Turn and loosen the Guide Lower Gear counterclockwise by means of the No. 6 Guide Lock Tool. (Fig. 8)

(6) Turn the No. 6 Guide and carry out the height adjustment.

Note: If the No. 6 Guide is raised too much, the wrinkles may occur between the Capstan Shaft and No. 5 Guide shown at the A. Check that the wrinkes are not occur. (Fig. 9)

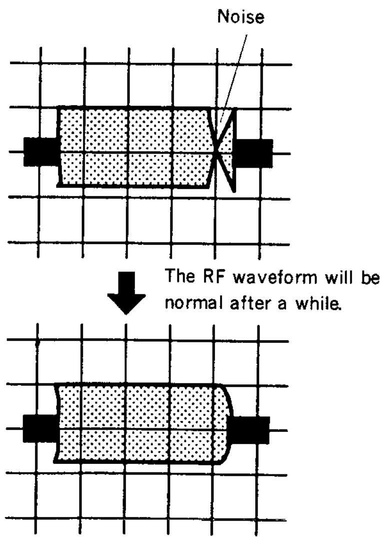


Fig. 11

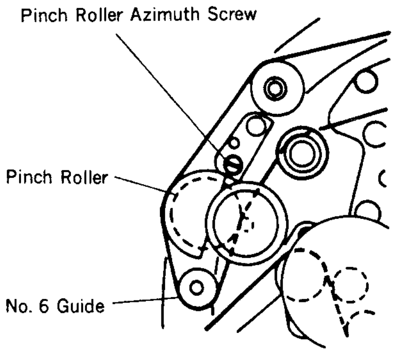


Fig. 12

In case of the noise occurs at the right hand side (lower of screen) into the playback rising edge after FF mode. (Fig. 11)

(7) Check that the FWD Back Tension is not too low.

In the case of the FWD Back Tension is normal.

(8) Adjust FWD Back Tension Adjustment referring to Section 5-5

In the case of the FWD Back Tension is normal.

(9) Turn the azimuth screw of the Pinch Roller clockwise about 5 degrees step adjusting the playback rising edge. (Fig. 2)

Note: After adjustment, check the playback rising edge after threading is completed.

3. Tape Running Check

Check tape running at guide flandes into the PLAY and REV modes.

No. 1, No. 2, No. 3 Guide and No. 5 Guides
... The tape runs with out any space and tape curling is less than 0.3mm.

No. 6 Guide
... Tape tape runs without any space and curl.

No. 4 Guide
... Tape runs without any space and tape curling is less than 0.5mm.

Note: Smear locking compound these points after checking.
No. 1 Guide Height Adjustment Screw
No. 5 Guide Lock Screw and Zenith Screw
Adjustment nut of No. 3 Guide
Adjustment nut of No. 4 Guide
Adjustment nut of No. 5 Guide

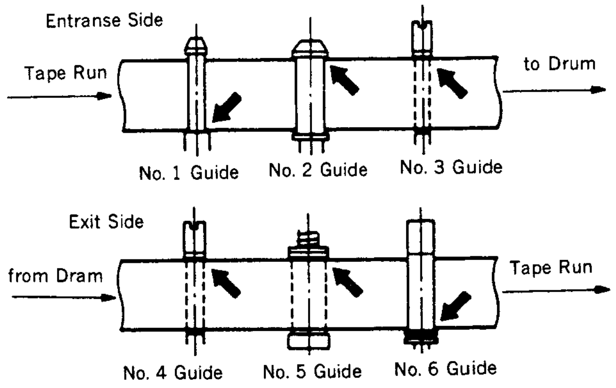

Entranse Side
Tape Run
to Drum
No. 1 Guide
No. 2 Guide
No. 3 Guide
Exit Side
from Dram
Tape Run
No. 4 Guide
No. 5 Guide
No. 6 Guide

Fig. 13

6-7. SWITCHING POSITION ADJUSTMENT

Tool: Oscilloscope
Alignment tape for switching position adjustment (WR2-3NS)

Adjustment Procedure:

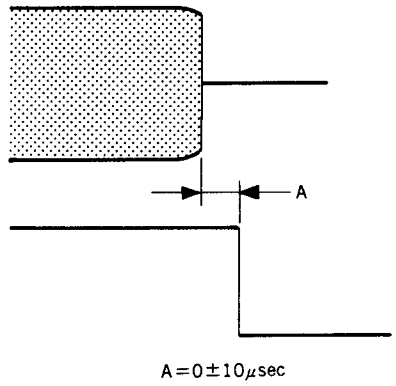
(1) Connect oscilloscope as follows.
CH-1: TP103/SE-10 (F-3)
CH-2: CN004-4pin/FR-40 (A-2)
Trigger: CH-2

(2) Play back alignment tape.

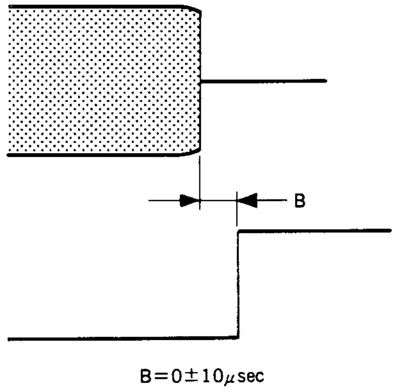
(3) Adjust RV101 on the SE-10 Board to meet spec. A.

(4) Connect oscilloscope as follows.
CH-2: CN004-3pin/FR-40 (A-2)

(5) Check that it meets spec. B.



A=0±10μsec



B=0±10μsec

SECTION 7
POWER SUPPLY ALIGNMENT

[Equipment Required]

- Digital voltmeter

7-1. +5V ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• E-E mode	TP3/DC-45 (C-1) 5.14±0.05V	⊘ RV1/DC-45 (F-1)

SECTION 8
SERVO SYSTEM ALIGNMENT

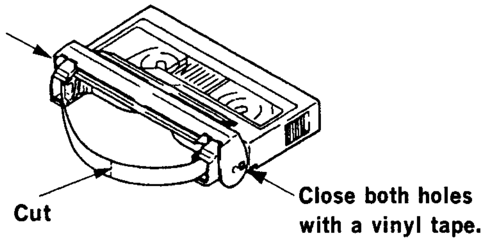
[Equipment Required]

- Oscilloscope
- Frequency counter
- Digital voltmeter
- Alignment tape

Name (Part No.)	REC mode	Tape Type	Tape Speed	Contents	
				Video Area	**PCM Area**
Switching position WR2-3NS (8-967-992-12)	STD	MP	SP	CH-1: 3MHz CH-2: 3MHz Marker Width: 100±10μsec	
SP operation check WR5-8NSE (8-967-995-43)	Hi8	ME	SP	VIDEO SIGNAL Color-bar 4 min. Monoscope 4 min. AUDIO SIGNAL (AFM) 400 Hz 60% mod.	AUDIO SIGNAL (PCM) 400 Hz 20 min.
LP operation check WR5-8NLE (8-967-995-52)	Hi8	ME	LP	VIDEO SIGNAL Color-bar 4 min. Monoscope 4 min. AUDIO SIGNAL (AFM) 400 Hz 60% mod.	AUDIO SIGNAL (PCM) 400 Hz 40 min.

- Empty cassette (See below.)

1. Draw out a tape and cut it.
2. Cover two holes on both side of the cassette with a vinyl tape.

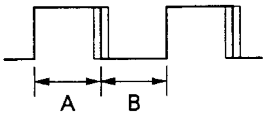


8-1. DS CLOCK CHECK

Machine condition for adjustment	Specifications	Adjustments
- VIDEO IN: color-bar signal - STOP mode	TP107/SE-10 (C-5) Level=more than 2.5 Vp-p Frequency=3578756±300 Hz	

8-2. CAPSTAN FG DUTY ADJUSTMENT

Remove the Bottom Plate and open the HK-4 Board for this adjustment. If it does not meet the specification, remove the mechanical deck and adjust again.

Machine condition for adjustment	**Specifications**	**Adjustments**
• Connect each TP001 AND TP002 on the SE-10 board to ground with jumper wires. • Insert the empty cassette tape and put the machine into the play back mode. • After adjustment, remove the jumper wires.	TP105/SE-10 (D-4)  A≒B	⊘RV801/MD-23 (D-3)

8-3. REEL FG ADJUSTMENT

Remove the mechanical deck for this adjustment.

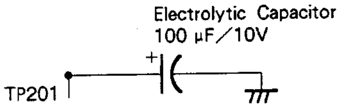
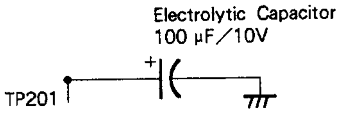
Connect only CN907 on the SE-10 Board.

Machine condition for adjustment	**Specifications**	**Adjustments**
• Play back the alignment tape WR5-8NLE.	TP901/MD-23 (G-1) 21±1Hz	⊘RV901/MD-23 (G-1)
• Perform confirmation while playing back the alignment tape WR5-8NLE.	TP902/MD-23 (E-1) 1.0 through 1.4Vdc	
• Perform confirmation while playing back the alignment tape WR5-8NLE with CUE (×9) mode. CUE (×9) : While pressing the PB button, press the FF button on the MB-19 Board. • After adjustment, install the mechanical deck.	TP901/MD-23 (G-1) 37 through 50 Hz TP902/MD-23 (E-1) 1.4 through 1.9Vdc	

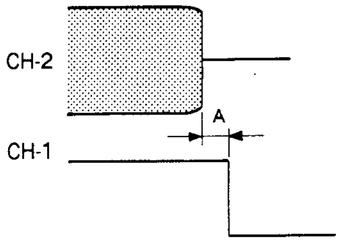
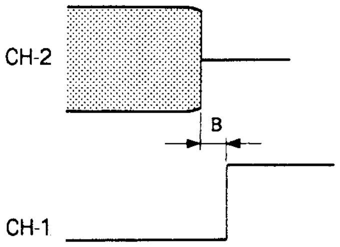
8-4. DRUM FREE SPEED ADJUSTMENT

Machine condition for adjustment	**Specifications**	**Adjustments**
• VIDEO IN: No signal • Use the Hi8 MP tape. • REC mode	TP101/SE-10 (D-6) 1.9±0.1Vdc	⊘RV102/SE-10 (E-6)

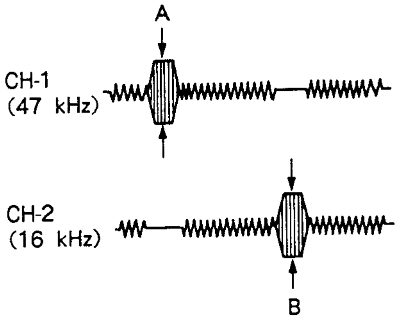
8-5. CAPSTAN FREE SPEED ADJUSTMENT

Machine condition for adjustment	**Specifications**	**Adjustments**
Step 1 • Connect TP201/SE-10 (H-3) to ground with electrolytic capacitor (100 μF/10V) during STOP mode.  • Connect TP002/SE-10 (D-6) to ground with jumper wire during STOP mode. • Play back the alignment tape WR5-8NSE. • After adjustment, remove the jumper wire and capacitor.	TP105/SE-10 (D-4) 960±1 Hz	⊘RV106/SE-10 (D-5)
Step 2 • Connect TP201/SE-10 (H-3) to ground with electrolytic capacitor (100 μF/10V) during STOP mode.  • Connect TP002/SE-10 (D-6) to ground with jumper wire during STOP mode. • Connect pin 4 of CN901/SE-10 (A-5) to ground with jumper wire during STOP mode. • Play back the alignment tape WR5-8NSE. • After adjustment, remove the jumper wire and capacitor.	TP105/SE-10 (D-4) 480±1 Hz	⊘RV105/SE-10 (D-5)

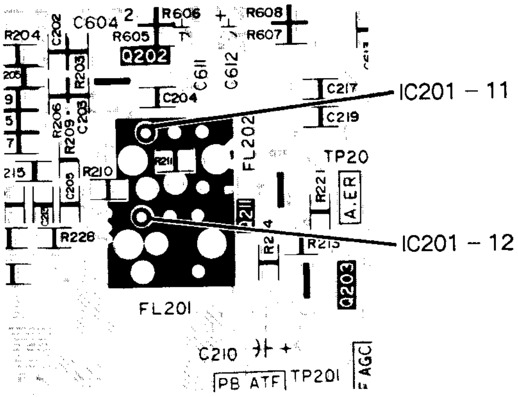
8-6. SWITCHING POSITION ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the alignment tape WR2-3NS.	CH-1 : TP103/SE-10(F-3) CH-2 : CN004—4/FR-40 (A-2)  A=0±10μsec	❶ RV101/SE-10 (C-6) Trigger: TP103/SE-10 (F-3)
	CH-1 : TP103/SE-10(F-3) CH-2 : CN004—3/FR-40 (A-2)  B=0±10μsec	Trigger: TP103/SE-10 (F-3)

8-7. ATF BPF BALANCE ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Connect TP208/SE-10 (H-3) to ground with jumper wire. • VIDEO IN: color-bar signal • Preform the self-recording /play back with a Hi8 ME tape. • After adjustment, remove the jumper wire.	CH-1: IC201-12/SE-10 (G-4) CH-2: IC201-11/SE-10 (G-4)  A CH-1 (47 kHz) CH-2 (16 kHz) B B=A	⊘RV201/SE-10 (G-4)

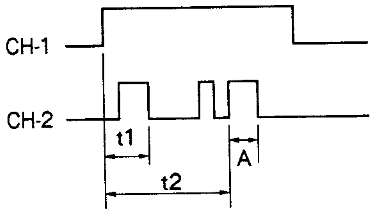
Note: It is difficult to connect the IC201-11 and IC201-12.
The substitutive positions of these pins described below.



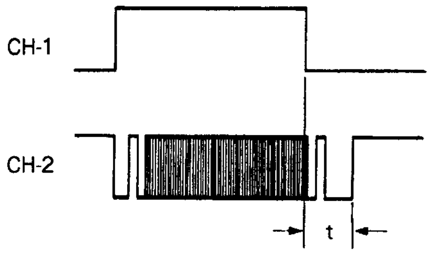
C604
R606
R608
R204
R605
R607
Q202
C611
C612
C204
C217
IC201 – 11
C219
FL202
TP20
R211
R210
R228
R215
A.ER
Q203
FL201
C210
PB ATF
TP201
AGC
IC201 – 12

* Open the SE-10 board.

8-8. STILL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: color-bar signal • Perform the self-recording/play back with a Hi8 ME tape. • JOG mode • Turn the Search Dial in the FWD direction and narrow the pulse width of A.	CH-1: TP103/SE-10 (F-3) CH-2: TP204/SE-10 (F-5)  CH-1 CH-2 t1 A t2 t1=4.0±0.1msec t2=11.4±0.1msec	t1 ⊘RV203/SE-10 (H-3) t2 ⊘RV204/SE-10 (H-3) Trigger: ⊘TP103/SE-10 (F-3)

8-9. SP SLOW ADJUSTMENT

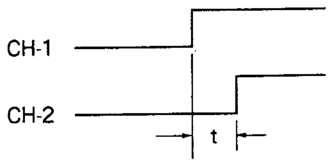
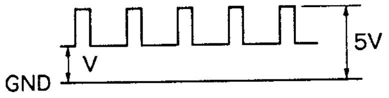
Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: color-bar signal • Using P6-120MPN tape, perform the short recording of the color-bar signal at the end of tape. • Connect TP001/SE-10 (C-2) to ground with jumper wire. • Connect the counter to TP1/DI-11 (B-6). • Put the unit into the SHUTTLE mode and turn the Search Dial in the FWD direction so that the frequency is about 192 Hz. Play back the recorded portion. (It corresponds to one-fifth time speed.) • When the noise appears on the monitor screen, adjust RV104 so that the noise at the bottom of the screen disappears. • After adjustment, remove the jumper wire.	CH-1 : TP103/SE-10 (F-3) CH-2 : TP105/SE-10 (D-4)  t=minimum	⊘RV304/SE-10 (E-2) ⊘RV104/SE-10 (D-5) Trigger: TP302/SE-10 (F-3)

8-10. LP SLOW ADJUSTMENT

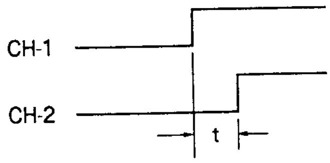
Note: This adjustment should be performed after completion of "8-9. SP SLOW ADJUSTMENT".

Machine condition for adjustment	Specifications	Adjustments
• Connect pin 4 of CN901/SE-10 (A-5) to ground with jumper wire. • VIDEO IN: color-bar signal • Perform the a short recording of the color-bar signal at the end of P6-120N tape. • Connect TP001/SE-10 (C-2) to ground with jumper wire. • Connect the counter to TP1/DI-11 (B-6). • Put the unit into the SHUTTLE mode and turn the Search Dial in the FWD direction so that the frequency is about 192 Hz. Play back the recorded portion. (It corresponds to one-fifth time speed.) • When the noise appears on the monitor screen, adjust RV103 so that the noise at the bottom of the screen disappears. • After adjustment, remove jumper wires.		⊘RV103/SE-10 (E-5)

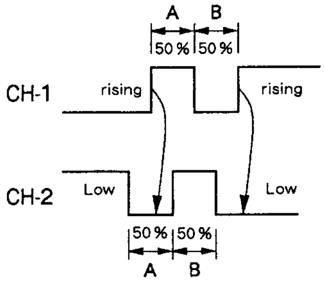
8-11. SP SLOW fH ADJUSTMENT

Machine condition for adjustment	**Specifications**	**Adjustments**
Step 1 • Perform the short recording of the color-bar signal with a Hi8 ME tape. • Connect the counter to TP1/DI-11 (B-6). • Put the unit into the SHUTTLE mode and turn the Search Dial in the FWD direction so that the frequency is about 32 Hz. Play back the recorded portion. (It corresponds to one-thirtieth time speed.)	CH-1 : TP103/SE-10 (F-3) CH-2 : TP102/SE-10 (D-5)  t=580±10μsec	⊘ RV301/SE-10 (F-1)
Step 2 • Perform the short recording of the color-bar signal with a Hi8 ME tape. • Connect the counter to TP1/DI-11 (B-6). • Put the unit into the SHUTTLE mode and turn the Search Dial in the FWD direction so that the frequency is about 192 Hz. Play back the recorded portion. (It corresponds to one-fifth time speed.)	TP301/SE-10 (E-2)  V=3.9±0.1Vdc	⊘ RV303/SE-10 (E-1)

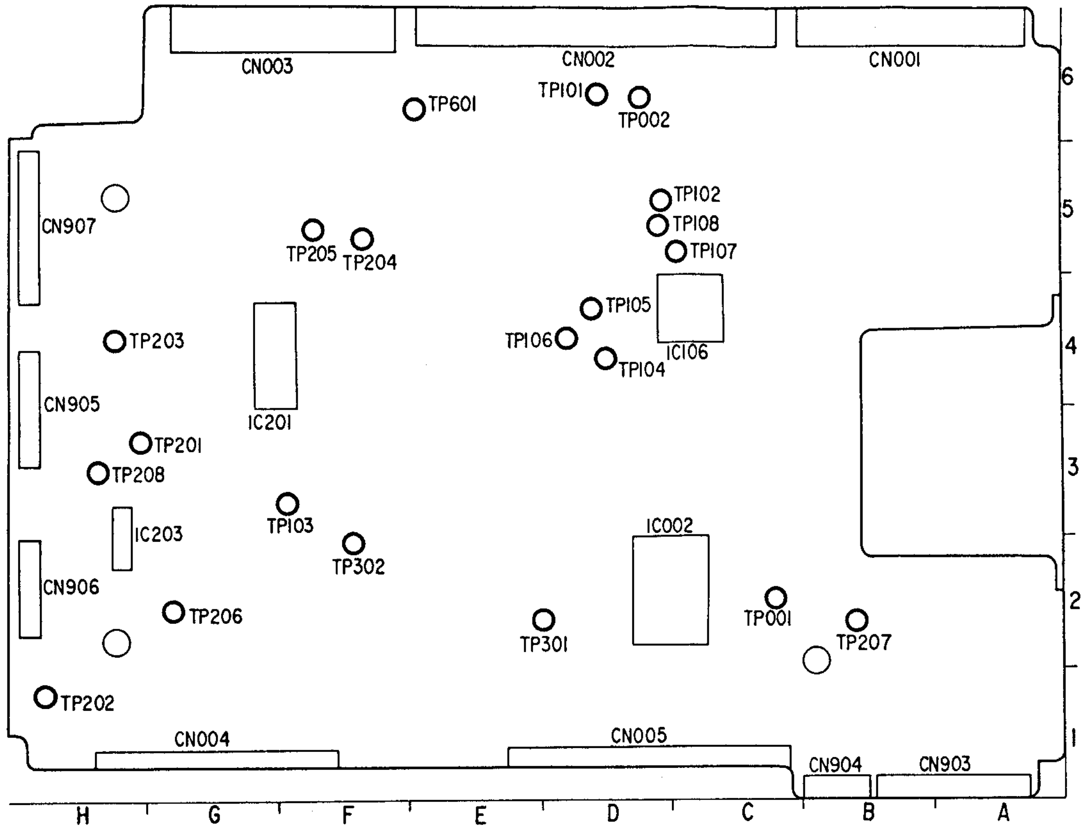
8-12. LP SLOW fH ADJUSTMENT

Machine condition for adjustment	**Specifications**	**Adjustments**
• Connect pin 4 of CN901/SE-10 (A-5) to GND with jumper wire. • Perform the short recording of the color-bar signal with a Hi8 ME tape. • Connect the counter to TP1/DI-11 (B-6). • Put the unit into the SHUTTLE mode and turn the Search Dial in the FWD direction so that the frequency is about 192 Hz. Play back the recorded portion. (It corresponds to one-fifth time speed.)	CH-1 : TP103/SE-10 (F-3) CH-2 : TP102/SE-10 (D-5)  t=580±10μsec	⊘ RV302/SE-10 (F-2)

8-13. CAPSTAN FG ADJUSTMENT

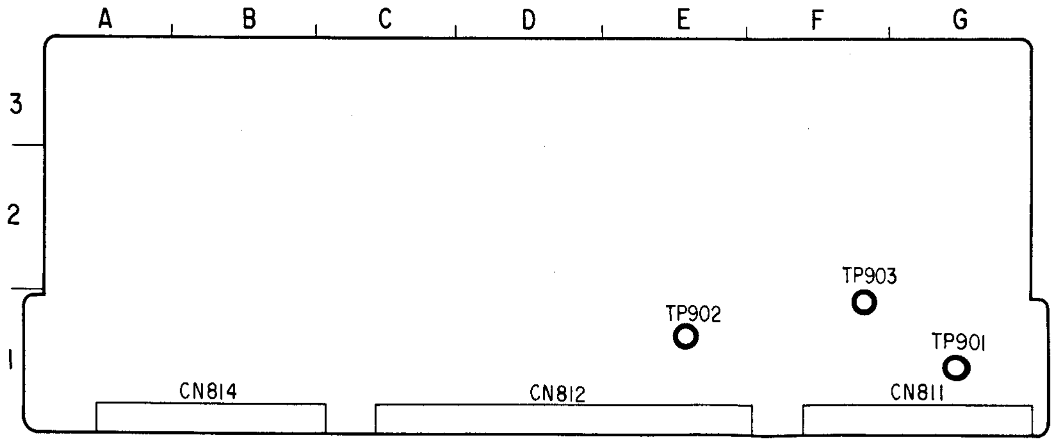
Machine condition for adjustment	Specifications	Adjustments
• Play back the alignment tape WR5-8NSE.	CH-1 : TP1/DI-11 (B-6) CH-2 : TP2/DI-11 (B-6)  A B 50 % 50 % CH-1 rising rising CH-2 Low Low 50 % 50 % A B A = B When the TP1 signal is rising-up, TP2 is Low level.	CH-1 ⊘ RV401/DI-11 (A-6) CH-2 ⊘ RV402/DI-11 (B-6)

Location of TPs on the SE-10 Board.


CN003
CN002
CN001
TP601
TP101
TP002
TP102
TP108
TP107
TP105
TP106
TP104
IC106
CN907
TP205
TP204
TP203
IC201
CN905
TP201
TP208
IC203
TP103
TP302
IC002
CN906
TP206
TP301
TP001
TP207
TP202
CN004
CN005
CN904
CN903
H
G
F
E
D
C
B
A
6
5
4
3
2
1

Place the unit on its right side down. Remove the Bottom Plate and Core Shield Plate. Open the HK-4 Board.

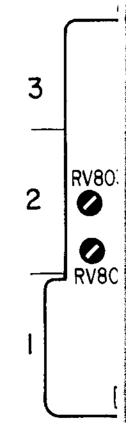
Location of TPs on the MD-23 Board.


A
B
C
D
E
F
G
3
2
1
TP903
TP902
TP901
CN814
CN812
CN811

Locatio

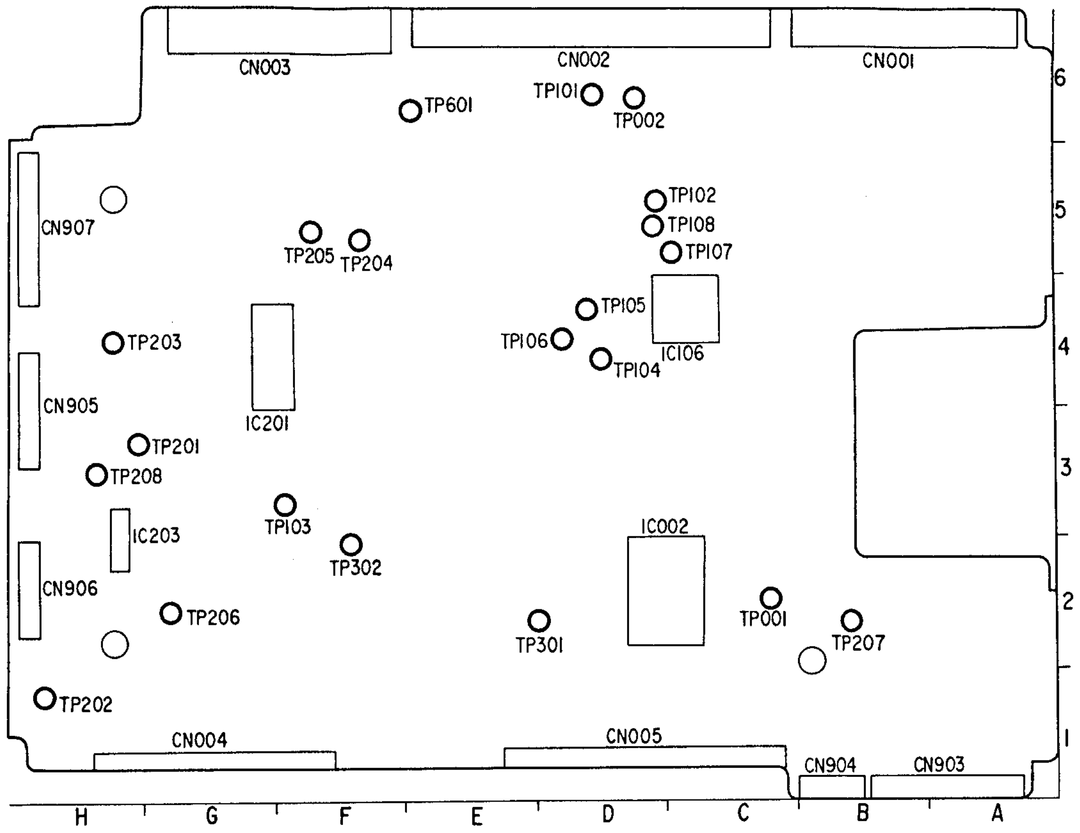
Place th

Locatio



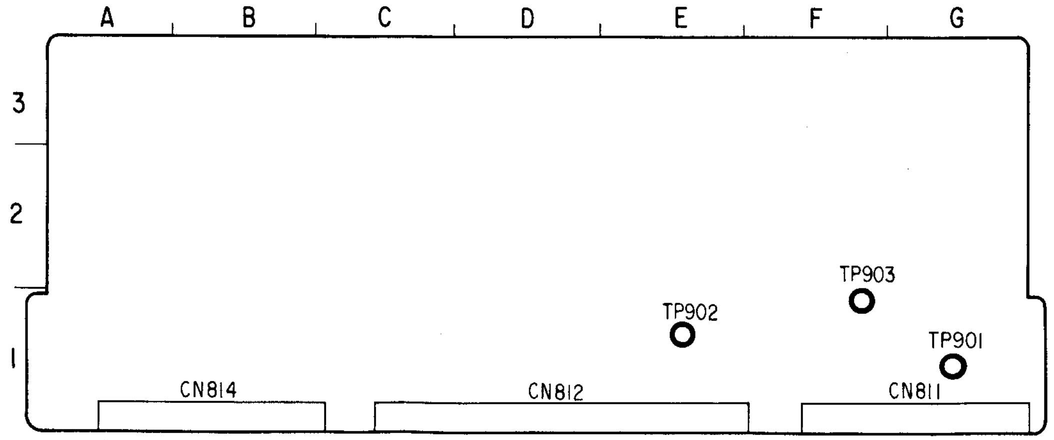
Adjust R

Location of TPs on the SE-10 Board.

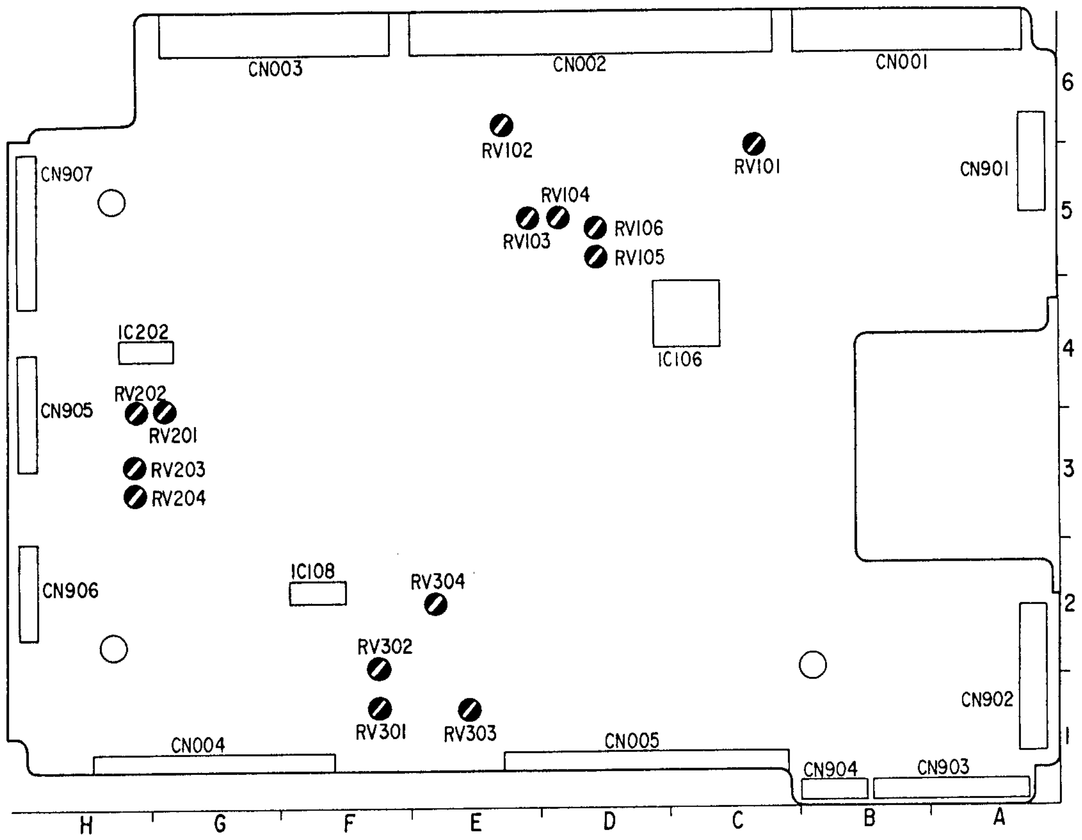

CN003
CN002
CN001
TP601
TP101
TP002
TP102
TP108
TP107
TP105
TP106
TP104
IC106
CN907
TP205
TP204
TP203
IC201
CN905
TP201
TP208
IC203
TP103
TP302
IC002
CN906
TP206
TP301
TP001
TP207
TP202
CN004
CN005
CN904
CN903
6
5
4
3
2
1
H
G
F
E
D
C
B
A

Place the unit on its right side down. Remove the Bottom Plate and Core Shield Plate. Open the HK-4 Board.

Location of TPs on the MD-23 Board.

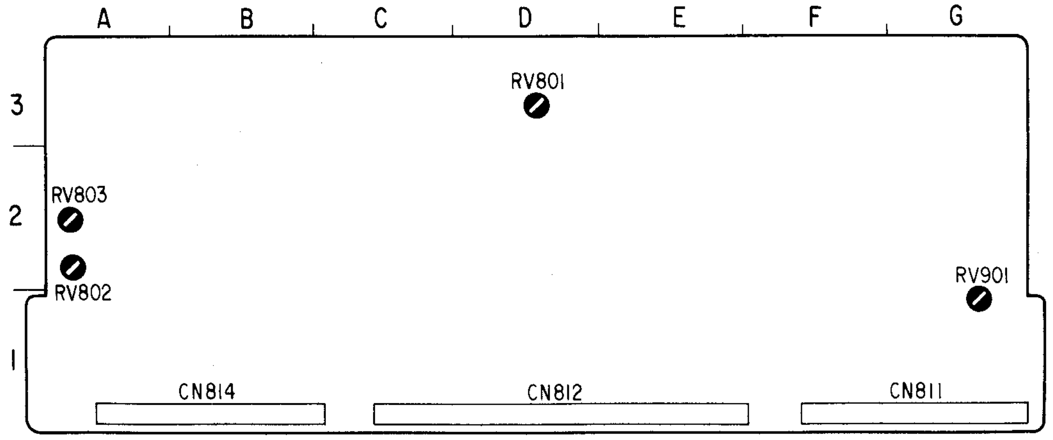

A
B
C
D
E
F
G
3
2
1
TP903
TP902
TP901
CN814
CN812
CN811

Location of TPs on the SE-10 Board.


CN003
CN002
CN001
RV102
RV101
CN901
CN907
RV104
RV103
RV106
RV105
IC202
IC106
CN905
RV202
RV201
RV203
RV204
CN906
IC108
RV304
RV302
RV301
RV303
CN902
CN004
CN005
CN904
CN903
6
5
4
3
2
1
H
G
F
E
D
C
B
A

Place the unit on its right side sown. Remove the Bottom Plate and Core Shield Plate. Open the HK-4 Board.

Location of TPs on the MD-23 Board.


A
B
C
D
E
F
G
3
2
1
RV801
RV803
RV802
RV901
CN814
CN812
CN811

Adjust RVs from the soldering side holes. (It is unnecessary to remove the MD-23 Board from the mechanical deck.)

SECTION 9
AUDIO SIGNAL SYSTEM ALIGNMENT

[Equipment Required]

- Oscilloscope
- Frequency counter
- Audio signal generator
- Audio level meter
- Digital voltmeter
- Alignment tape

Name (Part No.)	REC mode	Tape Type	Tape Speed	Contents	
				Video Area	PCM Area
SP operation check WR5-8NSE (8-967-995-43)	Hi8	ME	SP	VIDEO SIGNAL Color-bar 4 min. Monoscope 4 min. AUDIO SIGNAL (AFM) 400 Hz 60% mod.	AUDIO SIGNAL (PCM) 400 Hz 20 min.
LP operation check WR5-8NLE (8-967-995-52)	Hi8	ME	LP	VIDEO SIGNAL Color-bar 4 min. Monoscope 4 min. AUDIO SIGNAL (AFM) 400 Hz 60% mod.	AUDIO SIGNAL (PCM) 400 Hz 40 min.

9-1. PCM MASTER CLOCK ADJUSTMENT

Note: Before adjustment, remove the PA-27 board.

Machine condition for adjustment	Specifications	Adjustments
• Connect pin 14 of IC853/PD-19 (A-1) and pin 11 of CN852/PD-19 (A-2) with jumper wire. • E-E mode • After the adjustment, remove jumper wire.	IC853-8/PD-19 (A-1) 11.45±0.01 MHz	⊘RV851/PD-19 (A-2)

9-2. PCM PLAYBACK VCO FREE-FREQUENCY ADJUSTMENT

Note: Before adjustment, remove the PA-27 board.

Machine condition for adjustment	Specifications	Adjustments
• Connect pin 9 of CN851/PD-19 (B-1) and pin 11 of CN852/PD-19 (C-3) with jumper wire. • Connect pins 7 and 8 of CN852/PD-19 (C-3) with jumper wire. • E-E mode • After the adjustment, remove jumper wires.	IC854-8/PD-19 (A-2) 11.58±0.05 MHz	⊘RV854/PD-19 (A-2)

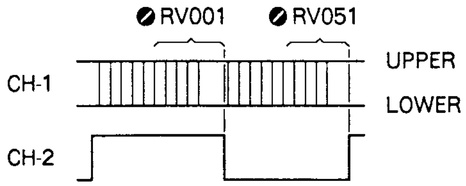
9-3. D/A CONVERTER LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the Audio 400 Hz portion of the alignment tape WR5-8NSE.	CN001-16/PA-27 (A-2) −4.0±0.2 dBs	⊘ RV032/PA-27 (A-1)

9-4. NR DECODE LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the Audio 400 Hz portion of the alignment tape WR5-8NSE.	CN001-20/PA-27 (A-3) −14.0±0.5 dBs • If adjustment value doesn't meet the specification, change the value of resistors as follows and perform adjustment again. R062 12k → 13k R012 12k → 13k	⊘ RV031/PA-27 (C-1)

9-5. A/D CONVERTER OFFSET ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Connect pin 8 of CN001/PA-27 (A-2) to pin 17 of CN001/PA-27 (A-2) with jumper wire. • Connect pins 15 and 18 of CN001 with jumper wire. • Connect pins 4 and 5 of CN001 with jumper wire. • REC mode (no signal input) • After adjustment, remove jumper wires.	CH-1 : CN001-11/PA-27 (A-2) CH-2 : CN001-9/PA-27 (A-2)  Adjust upper and lower brightnesses for the same.	L-CH ⊘ RV001/PA-27 (B-2) R-CH ⊘ RV051/PA-27 (B-1)

9-6. PCM REC LEVEL ADJUSTMENT

Note : This adjustment should be performed after completion of 9-4. NR DECODED LEVEL ADJUSTMENT.

Machine condition for adjustment	Specifications	Adjustments
• AUDIO LINE IN : 400 Hz/−10 dB • Preform the self-recording/play back with a Hi8 ME tape.	L-CH : CN001-20/PA-27 (A-3) −13.5±0.1 dB	L-CH ⊘ RV002/PA-27 (B-3)
	R-CH : CN001-1/PA-27 (A-1) −13.5±0.1 dB	R-CH ⊘ RV052/PA-27 (B-1)

9-7. PCM PB LINE OUTPUT LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• OUTPUT SELECT: PCM • Play back the 400 Hz portion of the alignment tape WR5-8NSE.	CH-1 AUDIO OUT connector (terminated with 600Ω) 4.0±0.3 dBm	CH-1 ⊘RV301/AU-127 (J-4)
	CH-2 AUDIO OUT connector (terminated with 600Ω) 4.0±0.3 dBm	CH-2 ⊘RV302/AU-127 (K-4)

9-8. AFM PB LINE OUTPUT LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• OUTPUT SELECT: AFM • Play back the 400 Hz portion of the alignment tape WR5-8NSE.	CH-1 AUDIO OUT connector (terminated with 600Ω) 4.0±0.3 dBm	⊘RV351/AU-127 (D-3)

9-9. E-E LEVEL ADJUSTMENT

Note: The AUDIO LEVEL control should not be touch until rest Section 9 Audio Signal System Alignment.

Machine condition for adjustment	Specifications	Adjustments
• AUDIO LINE IN: 400 Hz/+4 dBs • AFM INPUT SELECT: CH-1 • OUTPUT SELECT: PCM • AUDIO LIMITER: OFF • Play back the Hi8 ME tape. • STOP mode	CH-1: TP102/AU-127 (G-3) CH-2: TP202/AU-127 (G-2) CH-1, CH-2=−12±0.3 dBm	CH-1 ⊘CH-1 AUDIO LEVEL/ Front Panel CH-2 ⊘CH-2 AUDIO LEVEL/ Front Panel

9-10. E-E PB LINE OUTPUT LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• AUDIO LINE IN: 400 Hz/+4 dBs • OUTPUT SELECT: PCM • E-E mode	CH-1 AUDIO OUT connector (terminated with 600Ω) 4.0±0.3 dBm	CH-1 ⊘RV401/AU-127 (F-3)
	CH-2 AUDIO OUT connector (terminated with 600Ω) 4.0±0.3 dBm	CH-2 ⊘RV501/AU-127 (F-2)

9-11. AUDIO LEVEL METER ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• AUDIO LINE IN: 400 Hz/+4 dBs • OUTPUT SELECT: PCM • E-E mode	CH-1 AUDIO LEVEL METER 0±0.5 dB	CH-1 ⊘RV601/AU-127 (A-3)
	CH-2 AUDIO LEVEL METER 0±0.5 dB	CH-2 ⊘RV701/AU-127 (A-3)

9-12. MIC INPUT LEVEL ADJUSTMENT (CH-1)

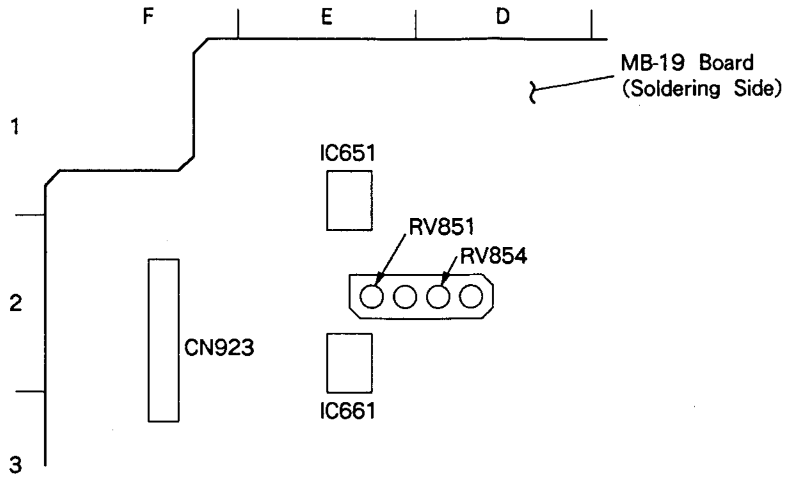
Machine condition for adjustment	Specifications	Adjustments
• OUTPUT SELECT: PCM • Play back the Hi8 ME tape. • STOP mode		
Step 1 • MIC IN: 400 Hz/—60 dBs • AUDIO LIMITER: OFF	TP102/AU-127 (G-3) A=—12±1 dBm	
Step 2 • MIC IN: 400 Hz/—30 dBs • AUDIO LIMITER: ON	TP102/AU-127 (G-3) (A+3)+0.3 dBm	⊘RV101/AU-127 (G-4)

9-13. MIC INPUT LEVEL ADJUSTMENT (CH-2)

Machine condition for adjustment	Specifications	Adjustments
• OUTPUT SELECT: PCM • Play back the Hi8 ME tape. • STOP mode		
Step 1 • MIC IN: 400 Hz/—60 dBs • AUDIO LIMITER: OFF	TP202/AU-127 (G-2) A=—12±1 dBm	
Step 2 • MIC IN: 400 Hz/—30 dBs • AUDIO LIMITER: ON	TP202/AU-127 (G-2) (A+3)±0.3 dBm	⊘RV201/AU-127 (H-2)

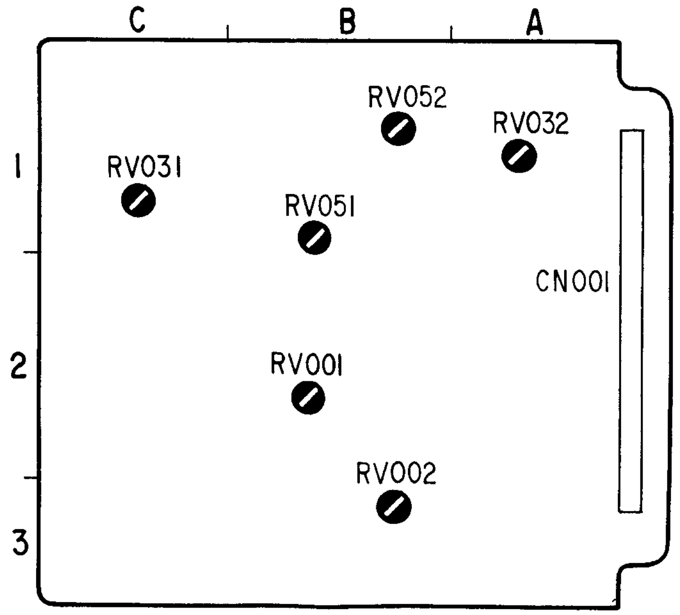
Location of RVs on the PD-19 Board.

Adjust RV851 and RV854 on the PD-19 Board from the soldering side holes of MB-19 Board.


F
E
D
MB-19 Board
(Soldering Side)
1
2
3
IC651
RV851
RV854
CN923
IC661

Location of RVs on the PA-27 Board.

Open the MB-19 Board and remove the shield case lid. Adjust RVs from the soldering side holes. (It is unnecessary to remove the PA-27 Board from the mechanical deck.)


C
B
A
1
2
3
RV052
RV032
RV031
RV051
CN001
RV001
RV002

SECTION 10

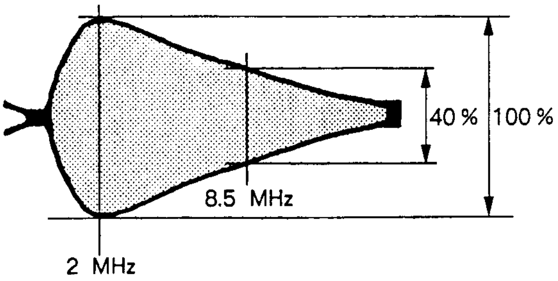
VIDEO SIGNAL SYSTEM ALIGNMENT

[Equipment Required]

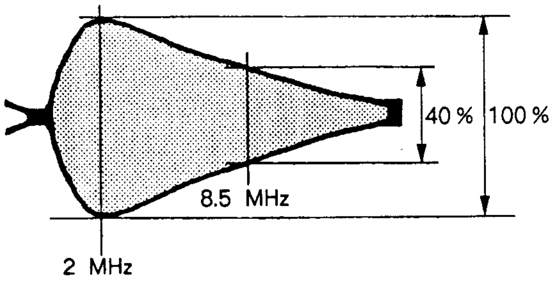
- Oscilloscope
- Frequency counter
- Test signal generator
- Vectorscope
- Vectorscope
- Sweep generator

Name (Part No.)	REC mode	Tape Type	Tape Speed	Contents	
				Video Area	PCM Area
Video freq. resp. WR5-7NE (8-967-995-13)	Hi8	ME	SP	RF sweep 0 to 15 MHz Marker: 2.0 MHz 4.5 MHz 7.0 MHz 8.5 MHz 10.0 MHz	
SP operation check WR5-5NSP (8-967-995-42)	STD	MP	SP	VIDEO SIGNAL Color-bar 4 min. Monoscope 4 min. AUDIO SIGNAL (AFM) 400 Hz 60% mod.	AUDIO SIGNAL (PCM) Monoscope Section 20 Hz 20 sec. 400 Hz 20 sec. 14 kHz 20 sec. Color-Bar Section 1 kHz 4 min.
SP operation check WR5-8NSE (8-967-995-43)	Hi8	ME	SP		AUDIO SIGNAL (PCM) 400 Hz 20 min.
LP operation check WR5-8NLE (8-967-995-52)	Hi8	ME	LP	VIDEO SIGNAL Color-bar 4 min. Monoscope 4 min. AUDIO SIGNAL (AFM) 400 Hz 60% mod.	AUDIO SIGNAL 400 Hz 40 min.

10-1. SP PB FREQUENCY RESPONSE ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the alignment tape WR5-7NE.	CN004-3/FR-40 (A-2)  8.5 MHz=40% (in reference to 2 MHz)	⊘ RV004/RP-73 (SP) Trigger: CN004-2/FR-40 (A-2)
	CN004-4/FR-40 (A-2) 8.5 MHz=40% (in reference to 2 MHz)	⊘ RV003/RP-73 (SP) Trigger: CN004-2/FR-40 (A-2)

10-2. LP PB FREQUENCY RESPONSE ADJUSTMENT

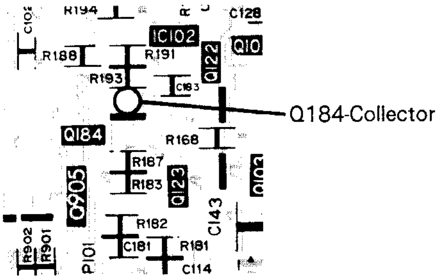
Machine condition for adjustment	Specifications	Adjustments
• Connect TP104/SE-10 (D-4) to ground with jumper wire. • Play back the alignment tape WR5-7NE. • After adjustment, remove a jumper wire.	CN004-5/FR-40 (A-2)  8.5 MHz=40% (in reference to 2 MHz)	⊘ RV004/RP-73 (LP) Trigger: CN004-2/FR-40 (A-2)
	CN004-6/FR-40 (A-2) 8.5 MHz=40% (in reference to 2 MHz)	⊘ RV003/RP-73 (LP) Trigger: CN004-2/FR-40 (A-2)

10-3. FLYING ERASE CONFIRMATION

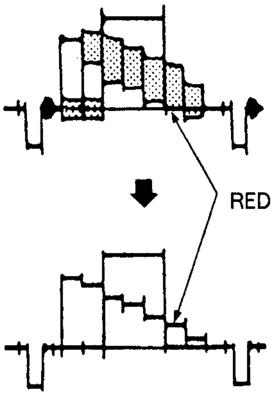
Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: color-bar signal • Use a Hi8 ME tape. • REC mode	TP041/FR-40 (C-1) 7.9±0.5 MHz	

10-4. SUBCARRIER FREQUENCY ADJUSTMENT

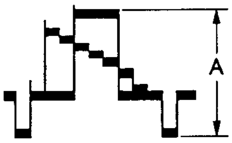
Machine condition for adjustment	Specifications	Adjustments
• DIGITAL CNR SW: AUTO • VIDEO IN: no signal • PB mode	Q184-collector/HK-4 (F-4) 3579545±30 Hz	⊘ CV601/HK-4 (B-3)


C102
R194
C128
IC102
Q10
R188
R191
Q122
R193
C183
Q184-Collector
Q184
R168
R187
R183
Q123
Q102
C905
R182
C143
R902
R901
P101
C181
R181
C114

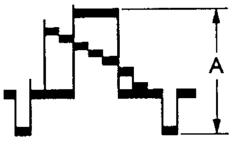
10-5. PB C COMB FILTER ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Supply the composite color-bar signal (Y=0.5 Vp-p, burst=0.143 Vp-p) to CN911-4/HK-4 (H-2). • E-E mode	IC501-26/HK-4 (B-2)  Minimize residual chroma component at RED portion (30 mVp-p or less)	⊘ RV502/HK-4 (A-3) ⊘ LV501/HK-4 (B-3)

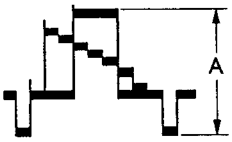
10-6. SYNC AGC ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: color-bar signal • E-E mode	TP402/HK-4 (E-3)  A=0.50±0.02 Vp-p	⊘ RV302/HK-4 (D-1)

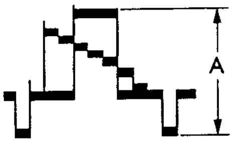
10-7. AGC OUTPUT LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: color-bar signal • E-E mode	TP301/HK-4 (B-3)  A=0.50±0.02 Vp-p	⊘ RV405/HK-4 (D-3)

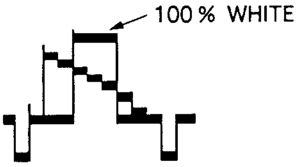
10-8. VIDEO OUTPUT LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: color-bar signal • E-E mode	TP303/HK-4 (E-1)  A=1.00±0.05 Vp-p	⊘ RV301/HK-4 (E-1)

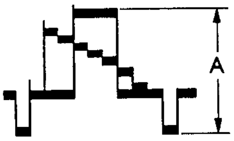
10-9. STD MODE PB Y LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color-bar signal portion of the alignment tape WR5-5NSP.	TP302/HK-4 (D-3)  A=0.50±0.02 Vp-p	⊘ RV304/HK-4 (E-2)

10-10. PB DE-EMPHASIS ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color-bar signal portion of the alignment tape WR5-5NSP.	TP302/HK-4 (D-3)  100% white level=makes flat	⊘ RV304/HK-4 (E-2)

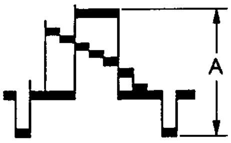
10-11. Hi8 MODE PB Y LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color-bar signal portion of the alignment tape WR5-8NSE.	TP302/HK-4 (D-3)  A=0.50±0.02 Vp-p	⊘ RV305/HK-4 (E-2)

10-12. STD MODE Y FM CARRIER ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: no signal • Use a P6-MP series tape. • E-E mode	IC401-14/HK-4 (D-2) 4.40±0.02 MHz	⊘ RV402/HK-4 (D-2)

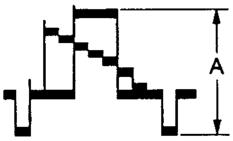
10-13. STD MODE Y FM DEVIATION ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: color-bar signal • Preform the self-recording/play back with a P6-MP series tape.	TP302/HK-4 (D-3)  A=0.50±0.02 Vp-p • Repeat recording and play back several times until the level meets the specification. Adjust the RV403 during recording.	⊘ RV403/HK-4 (D-2) When turning in the clockwise direction, the level decreases.

10-14. Hi8 MODE Y FM CARRIER ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: no signal • Use a Hi8 ME series tape. • E-E mode	TP401/HK-4 (C-3) 6.00±0.02 MHz	⊘ RV401/HK-4 (D-2)

10-15. Hi8 MODE Y FM DEVIATION ADJUSTMENT

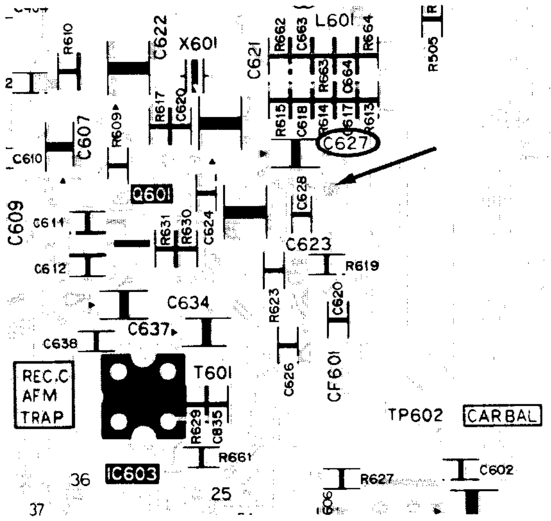
Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: color-bar signal • Preform the self-recording/play back with a Hi8 ME tape.	TP302/HK-4 (D-3)  A=0.50±0.02 Vp-p • Repeat recording and play back several times until the level meets the specification. Adjust RV404 during recording.	⊘ RV404/HK-4 (D-2) When turning in the clockwise direction, the level decreases.

10-16. 378f_H VCO ADJUSTMENT

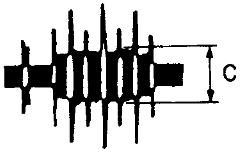
Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: color-bar signal • E-E mode • Solder the jumper wire to the position described below. Connect the voltmeter at the end of jumper wire. • After adjustment, remove the jumper wire.	IC602-26/HK-4 (B-4) 3.0±0.1Vdc	⊘ RV601/HK-4 (A-4)

Note: It is difficult to connect to 26 pin of IC602 because it is under the oscillator.
The substitutive position is described below.

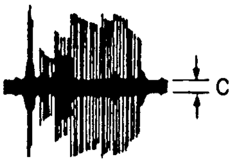
HK-4 Board(A-4)


R610
C622
X601
C621
R662
C663
L601
R664
R505
R617
C620
R663
C664
C607
R609
R615
C618
R614
C617
R613
C610
C627
Q601
C628
C609
C611
R631
R630
C624
C623
C612
R619
C634
R623
C620
C637
C636
REC.C AFM TRAP
T601
C626
CF601
R629
C635
TP602
CARBAL
R661
36
IC603
25
37
R627
C602
C606

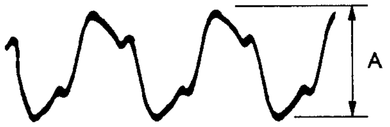
10-17. CHROMA EMPHASIS f_0 ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Connect pin 47 of IC602 to TP902/HK-4 (F-5) via 10 k ohm resistor. • Connect pin 47 of IC602 to ground via 10 k ohm resistor. • VIDEO IN: color-bar signal • E-E mode • After adjustment, remove the resistor.	IC601-11/HK-4 (A-5)  C (chroma component)=minimum	⊘ T602/HK-4 (A-6)

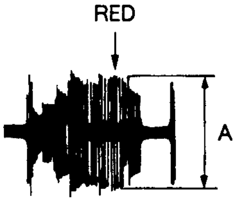
10-18. CARRIER BALANCE ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color-bar signal portion of the alignment tape WR5-8NSE.	TP602/HK-4 (A-5)  A (4.32 MHz component)=minimum	⊘ RV602/HK-4 (A-5)

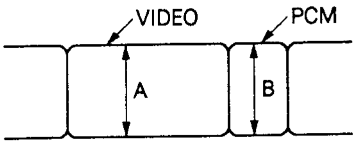
10-19. REC Y RF LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: no signal • Use a P6-MP tape • E-E mode	TP201/HK-4 (D-6)  A=0.62±0.02 Vp-p	⊘ RV202/HK-4 (D-5)

10-20. REC C RF LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Perform following connections. Q211-emitter (D-5)↔ TP902/HK-4 (F-5) CN101-3 (C-6) ↔ ground Q608-emitter (B-6)↔ ground • VIDEO IN: color-bar signal • E-E mode • After adjustment, remove the jumper wires.	TP201/HK-4 (D-6)  A=100±10m Vp-p	⊘ RV201/HK-4 (C-5)

10-21. SP REC CURRENT ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: 50% white signal • Use a Hi8 ME tape • REC mode	TP001/FR-40 (A-1)  A (VIDEO)=180±10 mV B (PCM)=180±10 mV	VIDEO ⊘ RV001/RP-73 (SP) PCM ⊘ RV002/RP-73 (SP) Trigger: CN004-2/FR-40

Note: LP REC CURRENT ADJUSTMENT (RV001, RV002) is unnecessary.

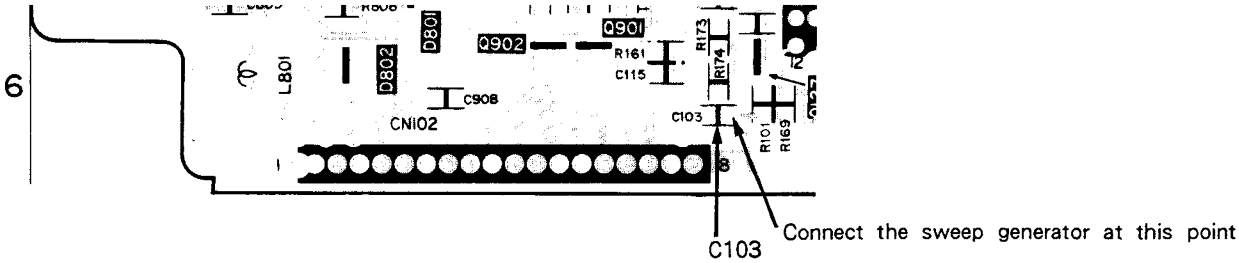
10-22. DOC LEVEL ADJUSTMENT

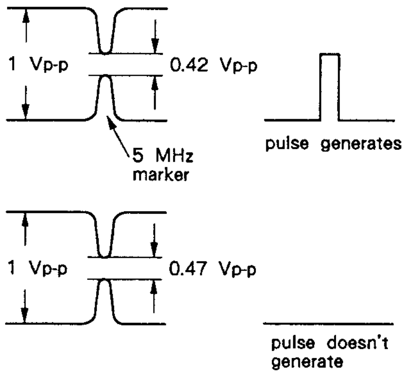
Step 1.

Note : Remove C103 on the HK-4 Board (F-6) for this adjustment. Use the sweep generator and put the marker in the 5 MHz portion. Adjust the level of maker to the level described below steps with variable volume of the sweep generator. After adjustment, solder the chip capacitor (0.047μF) to C103 on the HK-4 Board (F-6).
Be sure to use the new capacitor. (1-163-035-00)

Connect the output of sweep generator to the point of HK-4 Board after removing C103 as described below.

HK-4 soldering side

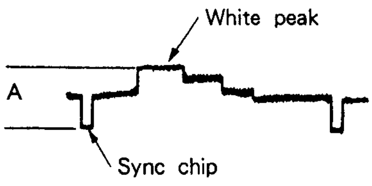

6
L801
D802
D801
Q902
Q901
R161
C115
R173
R174
C908
CN102
C103
R101
R169
Connect the sweep generator at this point
C103

Machine condition for adjustment	Specifications	Adjustments
• Play back the alignmnt tape WR5-7NE. • Adjust the marker level of the sweep generator to meet the specification.	IC501-17/HK-4 (B-2)  1 Vp-p 0.42 Vp-p 5 MHz marker pulse generates 1 Vp-p 0.47 Vp-p pulse doesn't generate	⊘ RV101/HK-4 (F-5)

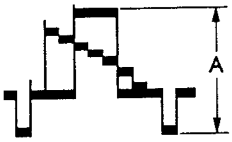
• After adjustment, remove the sweep generator and solder chip capacitor to C103.

Step 2.

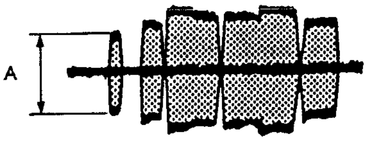
Use the oscilloscope in this adjustment.

Machine condition for adjustment	Specifications	Adjustments
• Supply the composite color-bar signal (Y=0.5 Vp-p, Burst=0.143 Vp-p, chroma OFF) to CN911-4 pin on the HK-4 Board (H-2).	IC501-12/HK-4 (B-2)  White peak A Sync chip A=0±15 mVp-p	⊘ RV501/HK-4 (A-2)

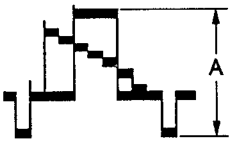
10-23. E-E Y SIGNAL LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN : color-bar signal • E-E mode	TP701/HK-4 (H-2)  A=1.00±0.05 Vp-p	⊘ RV702/HK-4 (H-2)

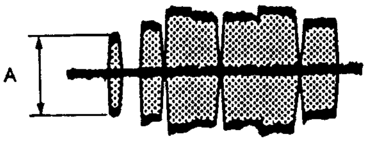
10-24. E-E C SIGNAL LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN : color-bar signal • E-E mode	TP801/HK-4 (H-4)  A=286±10 mVp-p	⊘ RV802/HK-4 (H-5)

10-25. JOG DIRECT Y SIGNAL LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color-bar signal portion of the alignment tape WR5-8NSE. • PAUSE mode	TP701/HK-4 (H-2)  A=1.00±0.05 Vp-p	⊘ RV701/HK-4 (G-2)

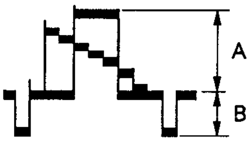
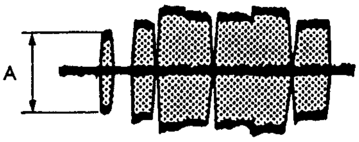
10-26. JOG DIRECT C SIGNAL LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color-bar signal portion of the alignment tape WR5-8NSE. • PAUSE mode	TP801/HK-4 (H-4)  A=286±10mV	⊘ RV801/HK-4 (G-5)

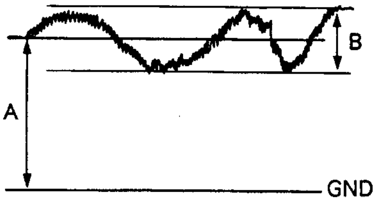
10-27. AFC ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• DIGITAL CNR SW: AUTO • VIDEO IN: no signal	TP203/DI-11 (E-5) 14318.180±30 kHz	⊘ CV301/DI-11 (E-6)

10-28. Y A/D INPUT LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bar signal portion of the alignment tape WR5-8NSE.	TP250/DI-11 (K-5)  B: A=2: 5±0.05	⊘ RV201/DI-11 (C-2)
	TP251/DI-11 (J-4)  $A=286\pm^{+20}_{-0}$ mV	⊘ RV202/DI-11 (C-4)

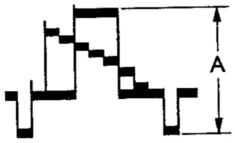
10-29. APC ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color-bar signal portion of the alignment tape WR5-8NSE.	TP205/DI-11 (E-2)  A=2.5±0.3V B=less than 0.5 Vp-p	⊘ CV302/DI-11 (E-2)

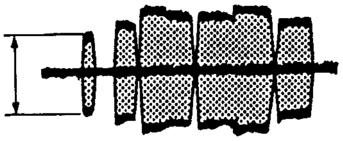
10-30. EXTERNAL SYNC AFC ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: no signal • E-E mode	TP3/DUS-309 (A-2) **Note:** For units of the serial Nos. 10341 and higher, connect as follows. TP703/DI-11 (G-6) 14318180±10 Hz	⊘ CV200/DUS-309 (C-2) **Note:** For serial Nos. 10341 and higher. CV720/DI-11 (G-6)

10-31. Y OUTPUT LEVEL ADJUSTMENT

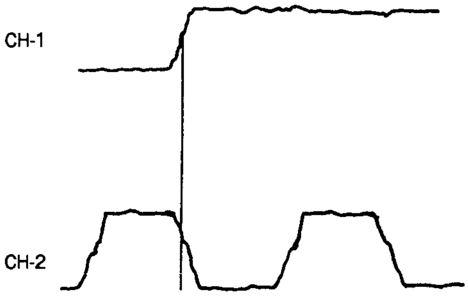
Machine condition for adjustment	Specifications	Adjustments
• Play back the color bar signal portion of the alignment tape WR5-8NSE.	TP651/DI-11 (K-4)  A=1.0±0.1 Vp-p	⊘ RV651/DI-11 (K-4)

10-32. CNR CHROMA OUTPUT LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bar signal portion of the alignment tape WR5-8NSE.	TP652/DI-11 (J-3)  A=0.286±0.01 Vp-p	⊘ RV652/DI-11 (J-4)

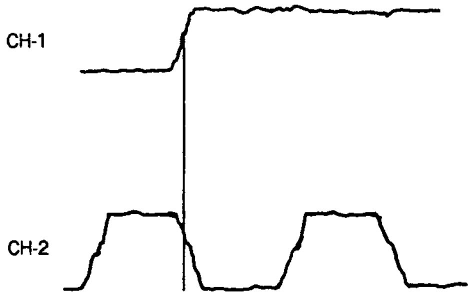
10-33. EXTERNAL SYNC PHASE ADJUSTMENT

Note : Perform this adjustment for units of serial Nos. 10041 and higher.

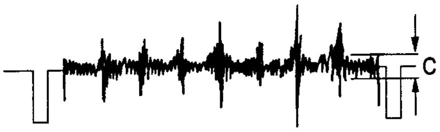
Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN : color-bar signal • Perform the self-recording/play back with a Hi8 ME tape. • SYNC IN (at play back mode) : Color-bar signal	CH-1 : TP connected with 73 pin of IC303/DI-11 (G-5) CH-2 : TP3/DUS-309 (A-2) **Note :** For units of these serial Nos. 10341 and higher connect CH-2 as follow. CH-2 : TP703/DI-11 (G-5)  Adjust the rising edge of CH-1 and falling edge of CH-2 to be the same level.	⊘ RV1/DUS-309 (B-2) **Note :** For serial Nos. 10341 and higher ⊘ RV701/DI-11 (G-6)

10-34. INTERNAL SYNC PHASE ADJUSTMENT

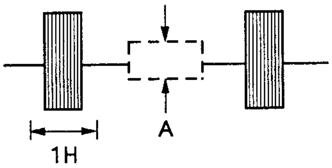
Note : Perform this adjustment for units of serial Nos. 10041 and higher.

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN : color-bar signal • Perform the self-recording/play back with a Hi8 ME tape. • SYNC IN (at play back mode) : none	CH-1 : TP connected with 73 pin of IC303/DI-11 (G-5) CH-2 : TP3/DUS-309 (A-2) **Note :** For units of the serial Nos. 10341 and higher, connect CH-2 as follow. CH-2 : TP703/DI-11 (G-5)  Adjust the rising edge of CH-1 and falling edge of CH-2 to be the same level.	⊘ CV200/DUS-309 (B-1) **Note :** For serial Nos. 10341 and higher ⊘ CV720/DI-11 (G-6)

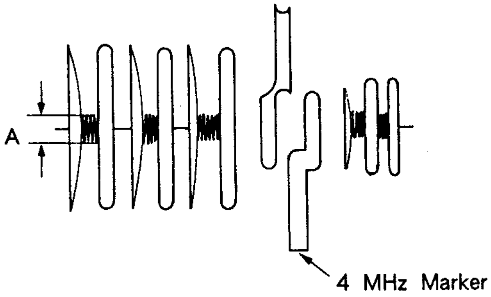
10-35. CHROMA CANCEL (1H) ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: Y-OFF color bar signal • E-E mode	TP4/YC-39 (H-3)  C (residual chroma component)=minimum Level=less than 25 mVp-p	⊘ RV1/YC-39 (K-2) ⊘ LV1/YC-39 (K-3)

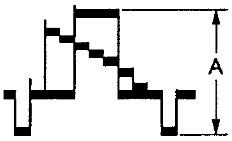
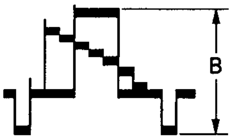
10-36. CHROMA CANCEL (2H) ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: linearity signal (ALT) • E-E mode	TP6/YC-39 (D-3)  A=less than 20 mVp-p	⊘ RV4/YC-39 (F-2) ⊘ LV2/YC-39 (G-4)

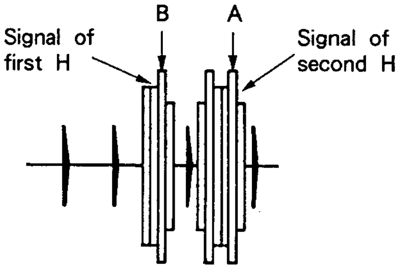
10-37. CORRELATION DETECTION LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: GATED SWEEP signal • E-E mode	TP10/YC-39 (B-3)  A=flat	⊘ RV5/YC-39 (D-2) Trigger: V SYNC OUT/sweep generator

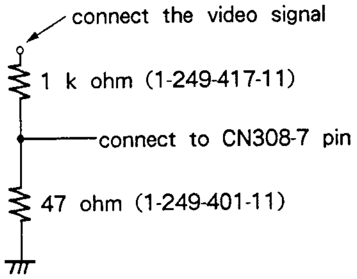
10-38. CNR MODE LINE OUTPUT LEVEL ADJUSTMENT

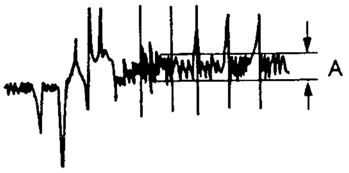
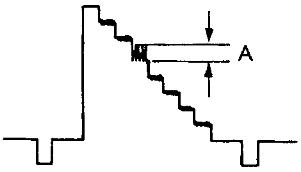
Machine condition for adjustment	Specifications	Adjustments
• VIDEO OUT: terminating with 75 ohm • Play back the color-bar signal portion of the alignment tape WR5-8NSE.		
Step 1 • DIGITAL CNR SW (sub panel): BYPASS	TP5/VO-24 (N-3)  Check the waveform is as shown in the figure.	
Step 2 • DIGITAL CNR SW (sub panel): AUTO	TP5/VO-24 (N-3)  B=A±0.01 Vp-p	⊘ RV651/DI-11 (K-4)

10-39. CORRELATION MIX LEVEL ADJUSTMENT

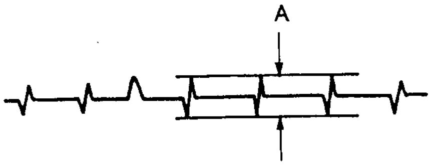
Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: color-bar signal • E-E mode	TP12/YC-39 (B-1)  A: B=100: 100±5%	⊘ RV3/YC-39 (H-2) Trigger: TP101/YC-39 (B-3) FIELD mode

10-40. CARRIER-LEAK CANCEL ADJUSTMENT

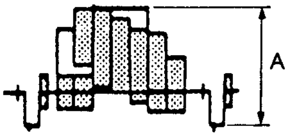


Machine condition for adjustment	Specifications	Adjustments
• Disconnect CN308 of VO-24 Board (J-5). • Solder a resister to the pattern of CN308-7 pin as described above. • Connect the pulse & bar signal to 1 k ohm resister. • E-E mode	TP1/VO-24 (L-3)  A (burst portion)=minimum	⊘ RV1/VO-24 (L-4)
• Disconnect CN308 of VO-24 Board (J-5). • Solder a resister to the pattern of CN308-7 pin as described above. • Connect the color-bar signal to 1 k ohm resister. • E-E mode • After adjustment, remove the resistor and connect CN308.	TP4/VO-24 (J-3)  A (chroma)=minimum (minimize the all chroma components)	⊘ RV2/VO-24 (K-4) ⊘ RV3/VO-24 (H-4)

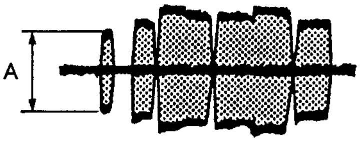
10-41. NOISE CANCEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: color-bar signal • Connect TP2 (M-3) and E1 (M-4) on the VO-24 board with jumper wire. • E-E mode • After adjustment, remove jumper wire.	CH-1 : TP51/VO-24 (J-2) CH-2 : TP52/VO-24 (H-1) (Level of TP51)×2=level of TP52	⊘ RV51/VO-24 (J-2)
	TP53/VO-24 (J-1)  A (burst portion)=minimum	⊘ RV52/VO-24 (H-1)

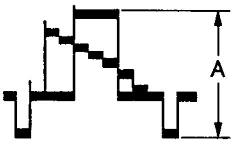
10-42. LINE OUTPUT LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO OUT: terminating with 75 ohm • Play back the color-bar signal portion of the alignment tape WR5-8NSE.	VIDEO OUT connector  A=1.00±0.05 Vp-p	⊘ RV4/VO-24 (J-3)

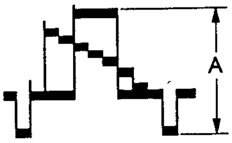
10-43. CNR MODE CHROMA OUTPUT LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: color-bar signal • Perform the self-recording/play back with a Hi8 ME tape.		
Step 1 • DIGITAL CNR SW: BYPASS	TP409/VO-24 (A-3) Value of this time is A.	
Step 2 • DIGITAL CNR SW: AUTO	TP409/VO-24 (A-3)  Burst Level=A±0.05 Vp-p	⊘ RV652/DI-11 (J-4)

10-44. DUB Y OUTPUT LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color-bar signal portion of the alignment tape WR5-8NSE.	TP202/VO-24 (F-5)  A=1.70±0.1 Vp-p	⊘ RV201/VO-24 (G-3)

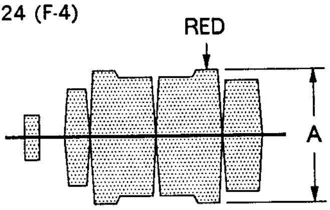
10-45. MONITOR OUTPUT LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Terminate the MONITOR OUT connector with 75 ohm terminator. • Play back the color-bar signal portion of the alignment tape WR5-8NSE.	TP101/VO-24 (N-3)  A=1.00±0.05 Vp-p	⊘RV101/VO-24 (N-1)

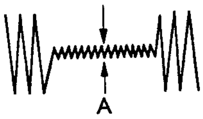
10-46. LOCAL OSCILLATOR FREQUENCY ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• STOP mode	TP502/VO-24 (C-2) 4267907±5 Hz	⊘CV500/VO-24 (D-2)

10-47. DUB CHROMA OUTPUT LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color-bar signal portion of the alignment tape WR5-8NSE.	TP501/VO-24 (F-4)  A=0.90±0.05 Vp-p	⊘RV501/VO-24 (F-4)

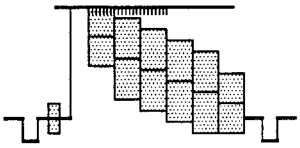
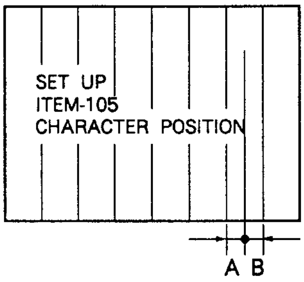
10-48. CHROMA NOISE CANCEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: color-bar signal • E-E mode	TP407/VO-24 (B-2)  A (burst portion)=less than 10 mVp-p	⊘RV404/VO-24 (B-3) Trigger: TP5/VO-24 (N-3)

10-49. Y/C MIX ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
Step 1 • Play back the color-bar signal portion of the alignment tape WR5-8NSE.	VIDEO OUT connector • Adjust RV5 so that RED beam component should be in the center of ⊞ portion.	• RV5/VO-24 (K-3)
Step 2 • Play back the color-bar signal portion of the alignment tape WR5-8NLE	VIDEO OUT connector • Adjust RV5 so that RED beam component should be in the center of ⊞ portion.	⊘ RV5/VO-24 (K-3)

10-50. CHARACTER MIX ADJUSTMENT

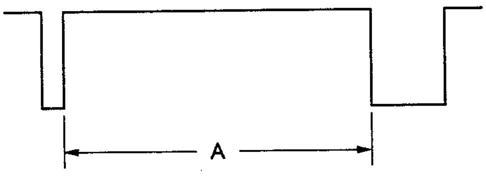
Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: full color-bar signal • E-E mode • Set the COUNTER/TC/DIAL MENU SW to DIAL MENU. • Connect the monitor to MONITOR OUT connector. • After adjustment, set the COUNTER/TC/DIAL MENU SW to center.	TP101/VO-24 (N-3) • While pressing the MENU key, turn the Search Dial and set the counter value for "105". • Match the white level and the character level. 	• RV100/VO-24 (N-1)
	DISPLAY  Adjust CV100 so that the right edge of the character N is positioned in the center (A=B) of blue area.	⊘ CV100/SY-145 (J-5)

10-51. SLOW TRACKING ADJUSTMENT

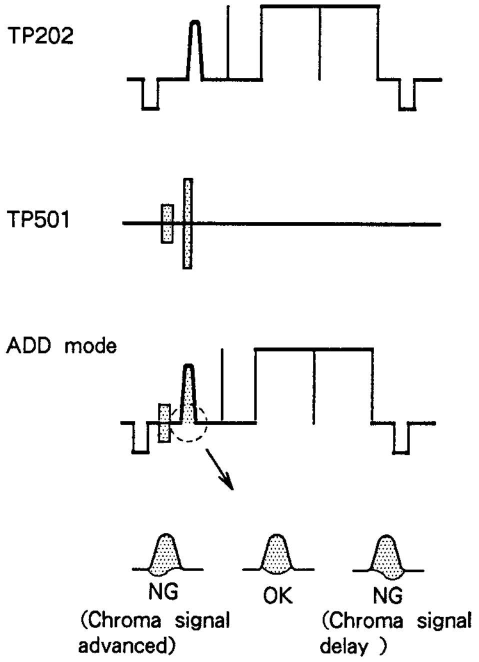
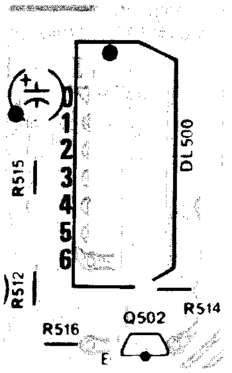
Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: color-bar signal • Perform the self-recording/playback about 20 sec. with a Hi8 ME tape. • Set the Slow Adjust Volume of Sub Panel to the center click position. • Connect the counter to TP1/DI-11 (B-6). • Put the unit into the SHUTTLE mode and turn the Search Dial in the FWD direction so that the frequency is 320 Hz. Play back the recorded portion. (It corresponds to one-third time speed.) • Minimize the noise on the monitor screen.		⊘ RV1/SY-145 (C-1)

10-52. CHARACTER DISPLAY RANGE ADJUSTMENT

Note: Perform this adjustment for units of serial Nos. 10041 and higher.

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: color-bar signal • E-E mode	TP101/SY-145 (I-5)  A=58±1 μS	⊘ RV2/SY-145 (E-5)

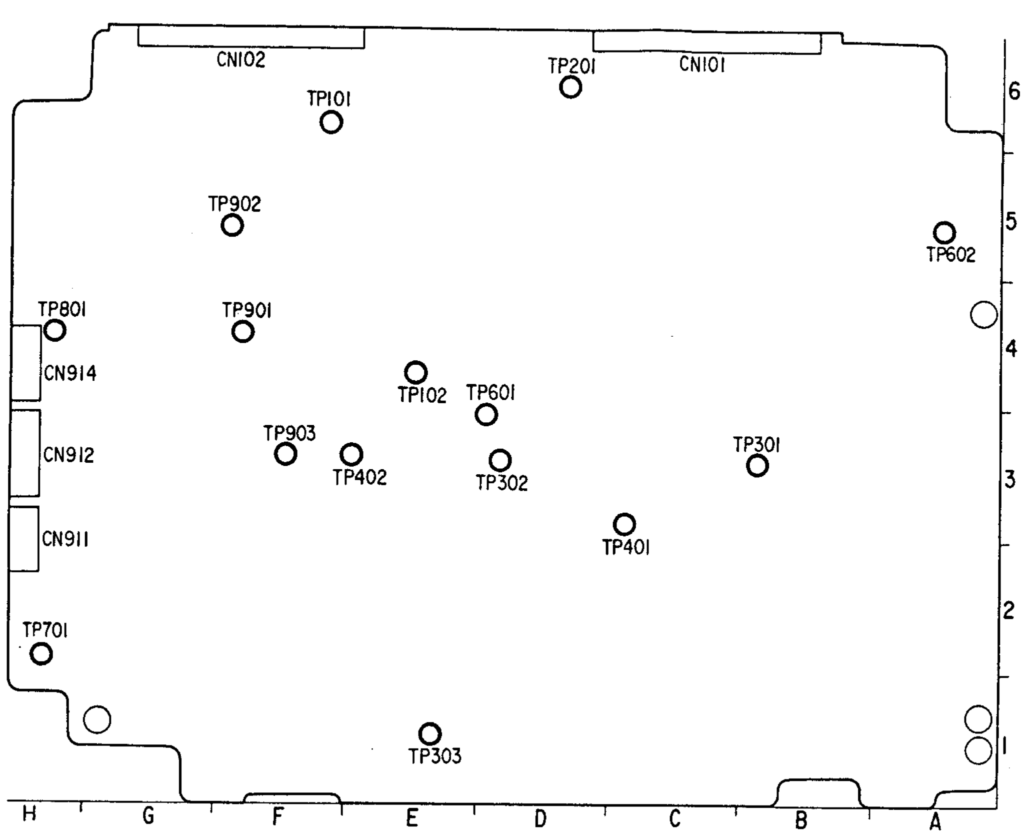
10-53. DUB Y/C DELAY ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• VIDEO IN: color-bar signal • Perform the self-recording/play back with a Hi8 ME tape.	CH-1 : TP202/VO-24 (F-5) CH-2 : TP501/VO-24 (F-5)  TP202 TP501 ADD mode NG (Chroma signal advanced) OK NG (Chroma signal delay)	⊘ DL500/VO-24 (E-3)  + 1 2 3 4 5 6 DL500 R515 R512 R516 Q502 R514 E Set the waveform to OK position. Move the DL500 in the direction that chroma delays two taps, and solder it. Trigger: TP100/VO-24 (J-12)

10-54. PICTURE SPLITTING ADJUSTMENT

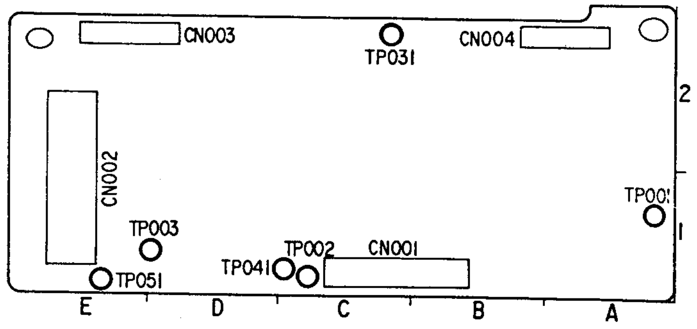
Machine condition for adjustment	Specifications	Adjustments
	Set RV802 and RV803 on the MD-23 board to the mechanical center position.	⊘ RV802/MD-23 (A-2) ⊘ RV803/MD-23 (A-2)

Location of TPs on the HK-4 Board.


CN102
TP101
TP201
CN101
6
TP902
5
TP602
TP801
TP901
4
CN914
TP102
TP601
TP903
TP301
CN912
TP402
TP302
3
CN911
TP401
2
TP701
1
TP303
H
G
F
E
D
C
B
A

Place the unit on its right side down. Remove the Bottom Plate and Core Shield Plate. Open the HK-4 Board.

Location of TPs on the FR-40 Board.


CN003
TP031
CN004
2
CN002
TP00
1
TP003
TP002
CN001
TP041
TP051
E
D
C
B
A

Remove the Top Plate and Open the MB-19 Board.

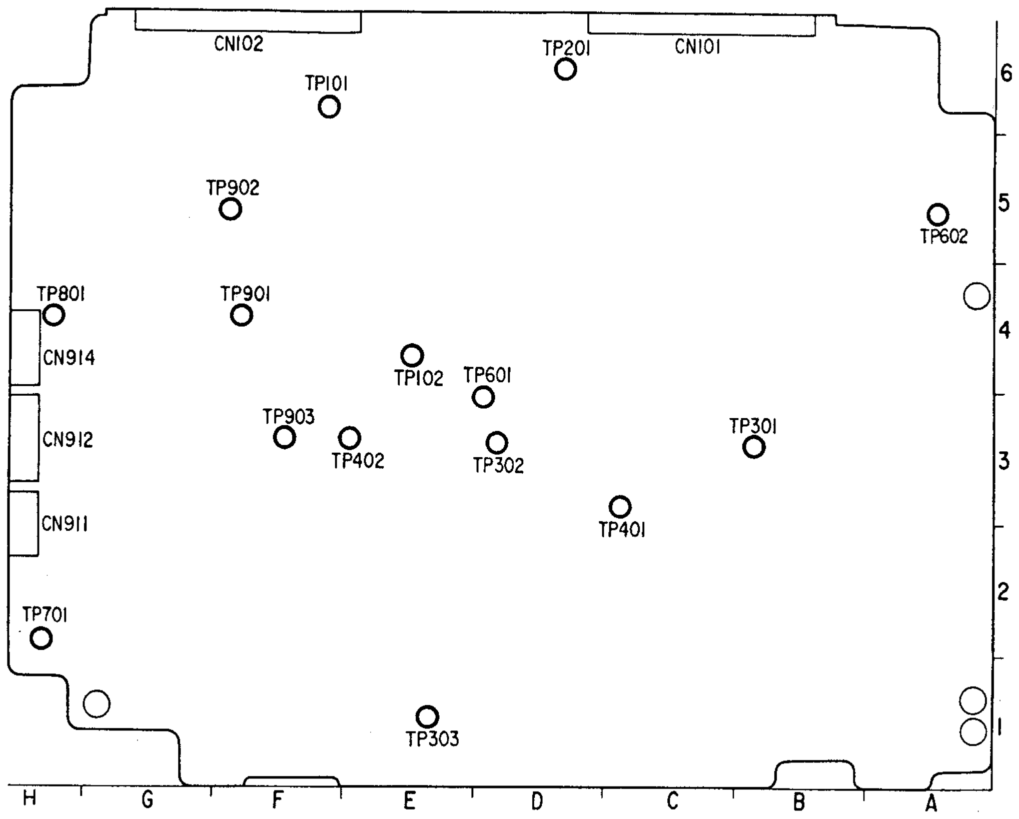
Locat

Place

Locat

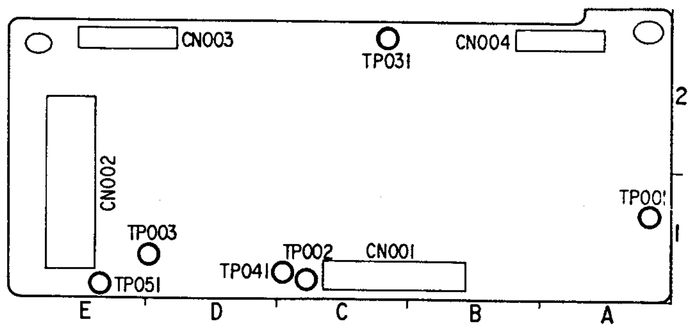
Remov

Location of TPs on the HK-4 Board.


CN102
CN101
TP101
TP201
TP902
TP602
TP801
TP901
CN914
TP102
TP601
CN912
TP903
TP402
TP302
TP301
CN911
TP401
TP701
TP303
6
5
4
3
2
1
H
G
F
E
D
C
B
A

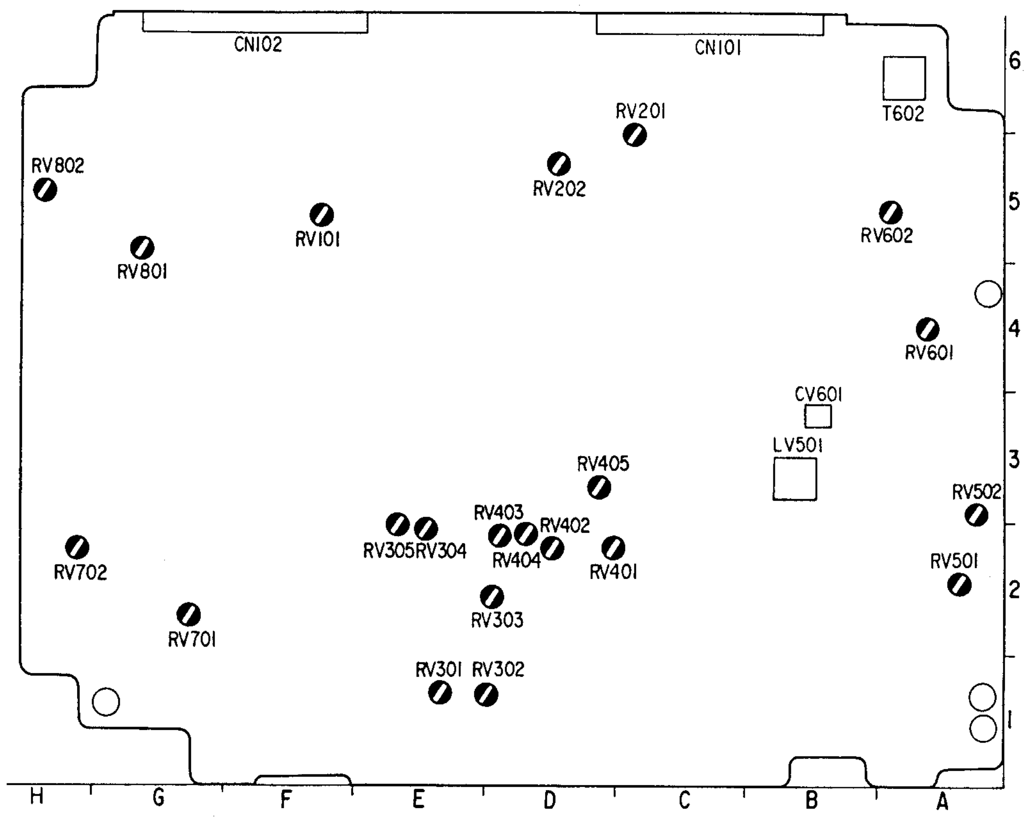
Place the unit on its right side down. Remove the Bottom Plate and Core Shield Plate. Open the HK-4 Board.

Location of TPs on the FR-40 Board.


CN003
TP031
CN004
CN002
TP001
TP003
TP002
CN001
TP041
TP051
2
1
E
D
C
B
A

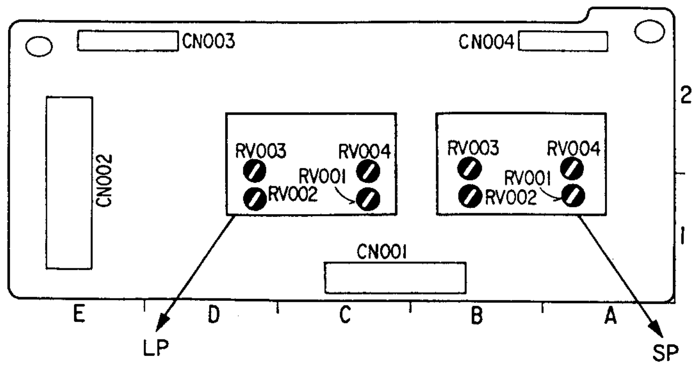
Remove the Top Plate and Open the MB-19 Board.

Locations of RVs, CVs, LVs and T on the HK-4 Board.


CN102
CN101
T602
RV201
RV802
RV202
RV101
RV602
RV801
RV601
CV601
LV501
RV405
RV403
RV402
RV502
RV305
RV304
RV404
RV401
RV501
RV702
RV303
RV701
RV301
RV302
6
5
4
3
2
1
H
G
F
E
D
C
B
A

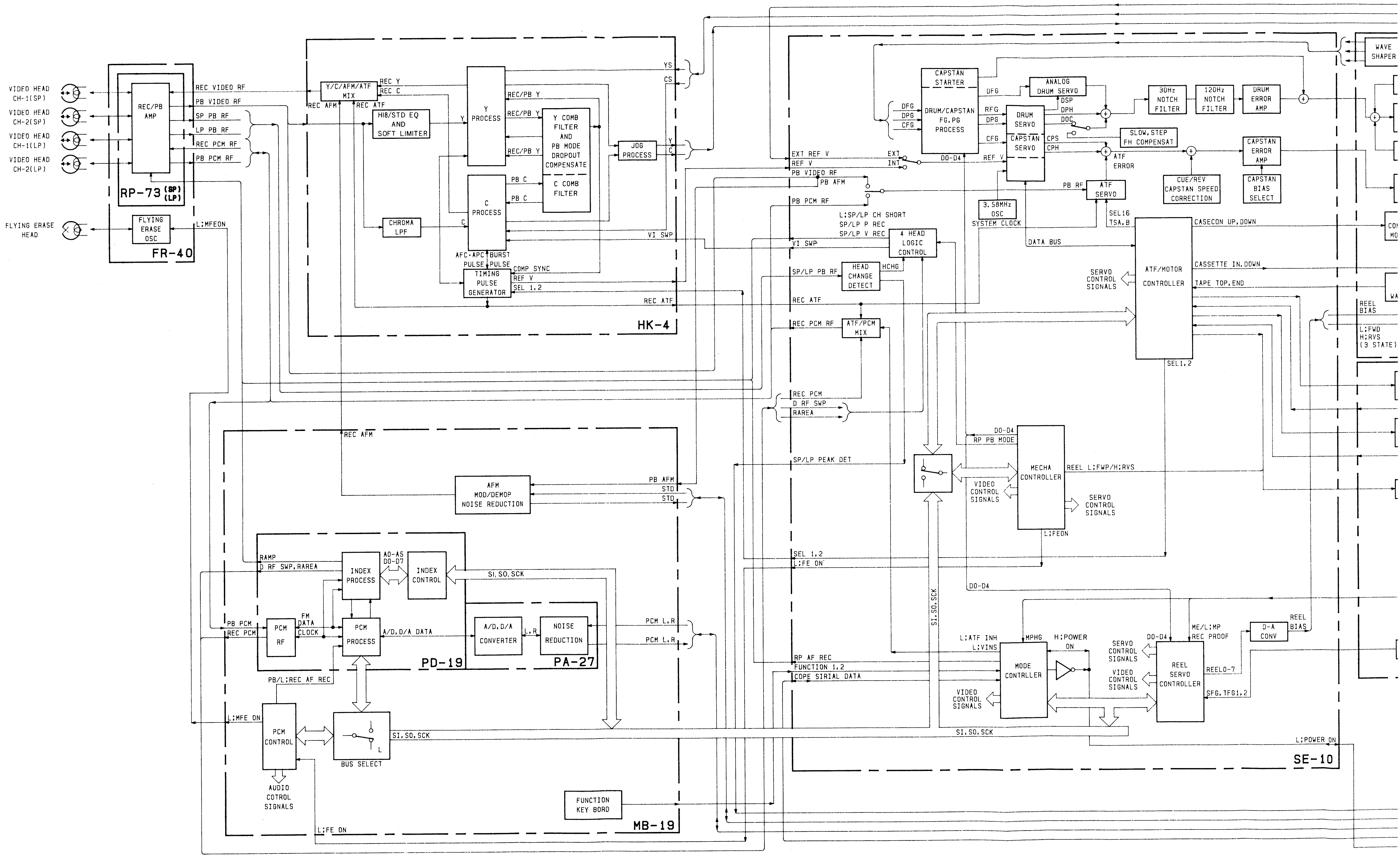
Place the unit on its right side down. Remove the Bottom Plate and Core Shild Plate. Open the HK-4 Board.

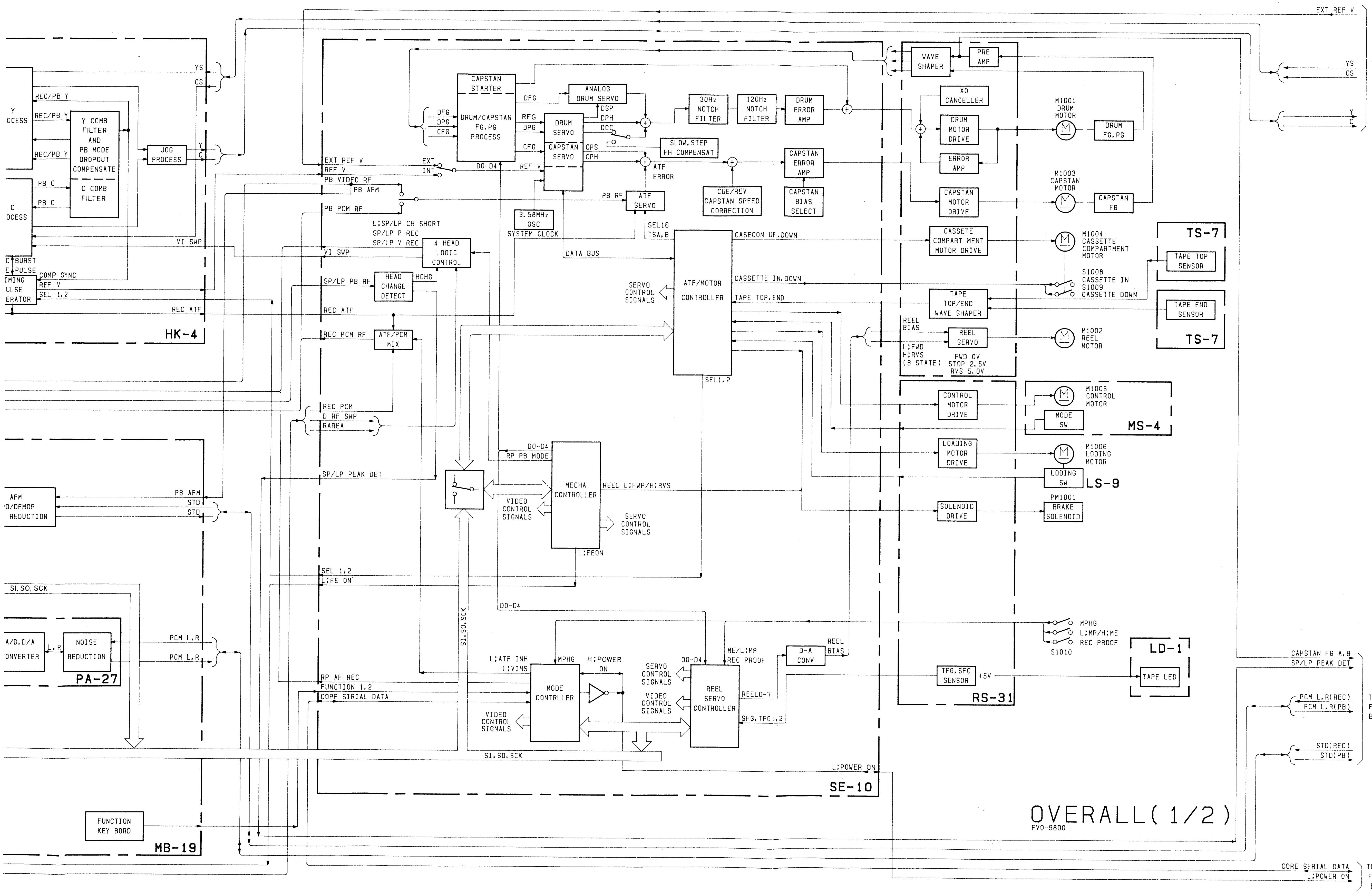
Location of RVs on the FR-40 and RP-73 Boards.


CN003
CN004
CN002
RV003
RV004
RV001
RV002
RV003
RV004
RV001
RV002
CN001
2
1
E
D
C
B
A
LP
SP

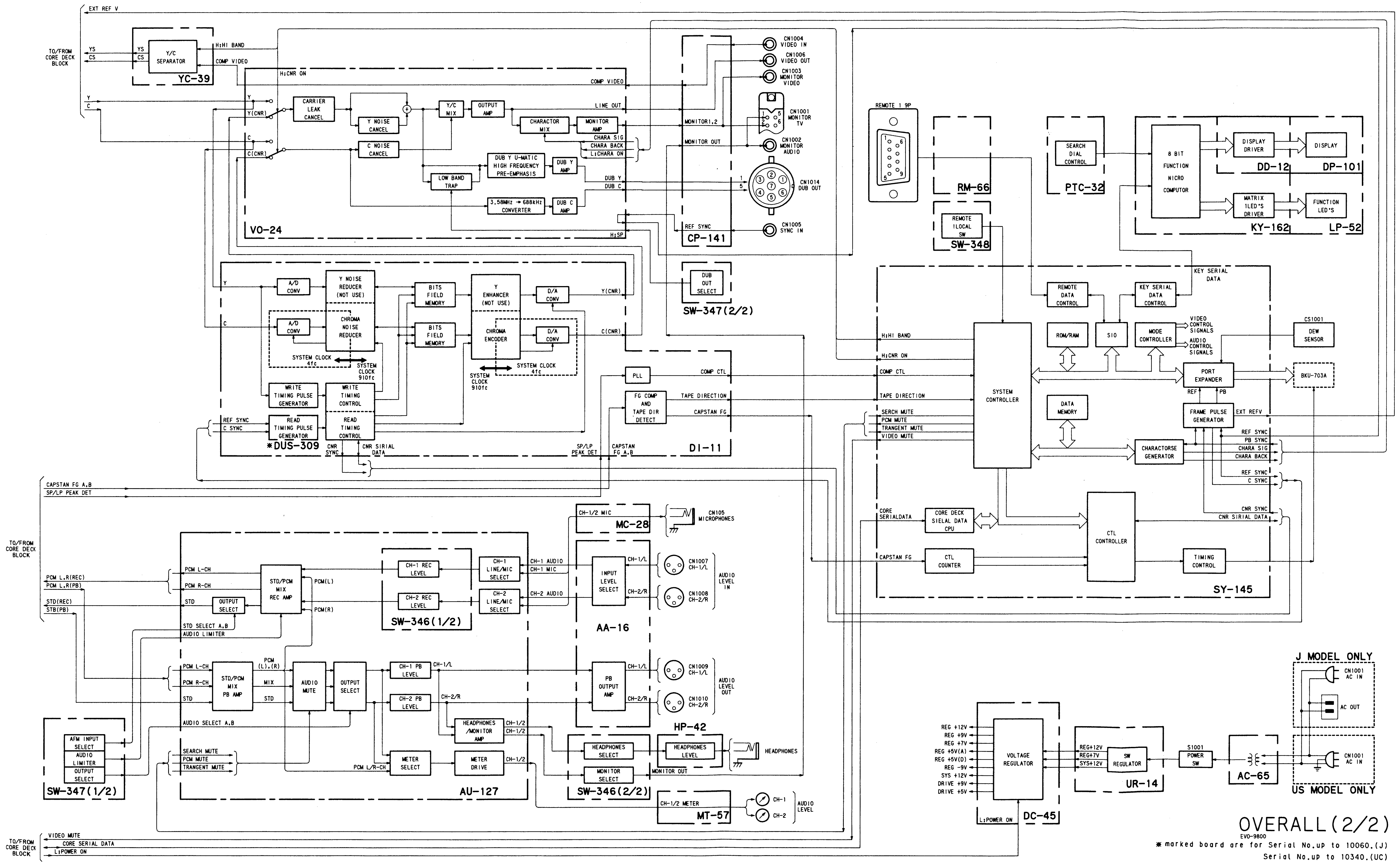
Remove the Top Plate and Open the MB-19 Board.

SECTION 11
BLOCK DIAGRAMS


VIDEO HEAD CH-1(SP)
VIDEO HEAD CH-2(SP)
VIDEO HEAD CH-1(LP)
VIDEO HEAD CH-2(LP)
FLYING ERASE HEAD
REC/PB AMP
RP-73 (SP) (LP)
FLYING ERASE OSC
FR-40
L;MFEON
REC VIDEO RF
PB VIDEO RF
SP PB RF
LP PB RF
REC PCM RF
PB PCM RF
Y/C/AFM/ATF MIX
REC Y
REC C
REC AFM
REC ATF
HI8/STD EQ AND SOFT LIMITER
Y PROCESS
REC/PB Y
Y COMB FILTER AND PB MODE DROPOUT COMPENSATE
C COMB FILTER
JOG PROCESS
YS
CS
Y
C
PB C
C PROCESS
CHROMA LPF
VI SWP
AFC·APC PULSE
BURST PULSE
TIMING PULSE GENERATOR
COMP SYNC
REF V
SEL 1,2
REC ATF
HK-4
REC AFM
AFM MOD/DEMOP NOISE REDUCTION
PB AFM
STD
RAMP
D RF SWP,RAREA
INDEX PROCESS
A0-A5 D0-D7
INDEX CONTROL
SI,SO,SCK
PB PCM
REC PCM
PCM RF
FM DATA
CLOCK
PCM PROCESS
A/D,D/A DATA
A/D,D/A CONVERTER
L,R
NOISE REDUCTION
PCM L,R
PD-19
PA-27
PB/L;REC AF REC
L;MFE ON
PCM CONTROL
BUS SELECT
AUDIO COTROL SIGNALS
FUNCTION KEY BORD
L;FE ON
MB-19
EXT REF V
REF V
PB VIDEO RF
PB AFM
PB PCM RF
L;SP/LP CH SHORT
SP/LP P REC
SP/LP V REC
4 HEAD LOGIC CONTROL
VI SWP
SP/LP PB RF
HEAD CHANGE DETECT
HCHG
REC ATF
REC PCM RF
ATF/PCM MIX
REC PCM
D RF SWP
RAREA
SP/LP PEAK DET
SEL 1,2
L;FE ON
RP AF REC
FUNCTION 1,2
COPE SIRIAL DATA
SI,SO,SCK
EXT
INT
CAPSTAN STARTER
DRUM/CAPSTAN FG,PG PROCESS
DFG
DPG
CFG
D0-D4
RFG
DRUM SERVO
CAPSTAN SERVO
ANALOG DRUM SERVO
DSP
DPH
DOC
CPS
CPH
30Hz NOTCH FILTER
120Hz NOTCH FILTER
DRUM ERROR AMP
SLOW,STEP FH COMPENSAT
ATF ERROR
CAPSTAN ERROR AMP
CUE/REV CAPSTAN SPEED CORRECTION
CAPSTAN BIAS SELECT
3.58MHz OSC
SYSTEM CLOCK
PB RF
ATF SERVO
SEL16
TSA,B
DATA BUS
SERVO CONTROL SIGNALS
ATF/MOTOR CONTROLLER
CASECON UP,DOWN
CASSETTE IN,DOWN
TAPE TOP,END
SEL1,2
WAVE SHAPER
REEL BIAS
L;FWD H;RVS (3 STATE)
D0-D4
RP PB MODE
MECHA CONTROLLER
REEL L;FWP/H;RVS
VIDEO CONTROL SIGNALS
SERVO CONTROL SIGNALS
L;FEON
SI,SO,SCK
D0-D4
L;ATF INH
L;VINS
MPHG
H;POWER ON
MODE CONTRLLER
VIDEO CONTROL SIGNALS
SERVO CONTROL SIGNALS
VIDEO CONTROL SIGNALS
ME/L;MP
REC PROOF
REEL SERVO CONTROLLER
REEL0-7
SFG,TFG1,2
D-A CONV
REEL BIAS
L;POWER ON
SE-10


EXT REF V
YS
CS
TO/FROM FEEDER BLOCK
Y
C
HK-4
REC/PB Y
Y OCESS
C OCESS
Y COMB FILTER AND PB MODE DROPOUT COMPENSATE
C COMB FILTER
PB C
JOG PROCESS
VI SWP
C BURST E PULSE
IMING ULSE ERATOR
COMP SYNC
REF V
SEL 1,2
REC ATF
CAPSTAN STARTER
DRUM/CAPSTAN FG,PG PROCESS
DFG
DPG
CFG
RFG
ANALOG DRUM SERVO
DRUM SERVO
CAPSTAN SERVO
DSP
DPH
DOC
CPS
CPH
30Hz NOTCH FILTER
120Hz NOTCH FILTER
DRUM ERROR AMP
SLOW,STEP FH COMPENSAT
CAPSTAN ERROR AMP
CAPSTAN BIAS SELECT
CUE/REV CAPSTAN SPEED CORRECTION
ATF ERROR
ATF SERVO
PB RF
EXT REF V
REF V
EXT
INT
D0-D4
PB VIDEO RF
PB AFM
PB PCM RF
3.58MHz OSC
SYSTEM CLOCK
SEL16
TSA,B
L;SP/LP CH SHORT
SP/LP P REC
SP/LP V REC
4 HEAD LOGIC CONTROL
VI SWP
SP/LP PB RF
HEAD CHANGE DETECT
HCHG
REC ATF
REC PCM RF
ATF/PCM MIX
DATA BUS
SERVO CONTROL SIGNALS
ATF/MOTOR CONTROLLER
CASECON UF,DOWN
CASSETTE IN,DOWN
TAPE TOP,END
SEL1,2
REC PCM
D RF SWP
RAREA
SP/LP PEAK DET
D0-D4
RP PB MODE
MECHA CONTROLLER
REEL L;FWP/H;RVS
VIDEO CONTROL SIGNALS
SERVO CONTROL SIGNALS
L;FEON
SEL 1,2
L;FE ON
SI,SO,SCK
D0-D4
AFM D/DEMOP REDUCTION
PB AFM
STD
SI,SO,SCK
A/D,D/A ONVERTER
L,R
NOISE REDUCTION
PA-27
PCM L,R
RP AF REC
FUNCTION 1,2
COPE SERIAL DATA
L;ATF INH
L;VINS
MPHG
H;POWER ON
MODE CONTRLLER
VIDEO CONTROL SIGNALS
SERVO CONTROL SIGNALS
VIDEO CONTROL SIGNALS
D0-D4
ME/L;MP
REC PROOF
REEL SERVO CONTROLLER
REEL0-7
SFG,TFG,1,2
D-A CONV
REEL BIAS
SI,SO,SCK
L;POWER ON
SE-10
FUNCTION KEY BORD
MB-19
WAVE SHAPER
PRE AMP
XO CANCELLER
DRUM MOTOR DRIVE
ERROR AMP
M1001 DRUM MOTOR
DRUM FG,PG
M1003 CAPSTAN MOTOR
CAPSTAN MOTOR DRIVE
CAPSTAN FG
CASSETE COMPART MENT MOTOR DRIVE
M1004 CASSETTE COMPARTMENT MOTOR
S1008 CASSETTE IN
S1009 CASSETTE DOWN
TAPE TOP/END WAVE SHAPER
TS-7
TAPE TOP SENSOR
TAPE END SENSOR
TS-7
REEL BIAS
REEL SERVO
L;FWD H;RVS (3 STATE)
FWD 0V STOP 2.5V RVS 5.0V
M1002 REEL MOTOR
CONTROL MOTOR DRIVE
M1005 CONTROL MOTOR
MODE SW
MS-4
LOADING MOTOR DRIVE
M1006 LODING MOTOR
LODING SW
LS-9
SOLENOID DRIVE
PM1001 BRAKE SOLENOID
MPHG
L;MP/H;ME
REC PROOF
S1010
TFG,SFG SENSOR
+5V
RS-31
LD-1
TAPE LED
CAPSTAN FG A,B
SP/LP PEAK DET
PCM L,R(REC)
PCM L,R(PB)
TO/FROM FEEDER BLOCK
STD(REC)
STD(PB)
TO/FROM FEEDER BLOCK
OVERALL(1/2)
EVO-9800
CORE SERIAL DATA
L;POWER ON
TO/FROM FEEDER BLOCK

OVERALL (2/2)


EXT REF V
TO/FROM CORE DECK BLOCK
YS
CS
Y/C SEPARATOR
YC-39
H:HI BAND
COMP VIDEO
H:CNR ON
Y
C
Y(CNR)
C(CNR)
CARRIER LEAK CANCEL
Y NOISE CANCEL
C NOISE CANCEL
Y/C MIX
OUTPUT AMP
CHARACTOR MIX
MONITOR AMP
LINE OUT
CHARA SIG
CHARA BACK
L:CHARA ON
DUB Y U-MATIC HIGH FREQUENCY PRE-EMPHASIS
DUB Y AMP
LOW BAND TRAP
3.58MHz → 688kHz CONVERTER
DUB C AMP
DUB Y
DUB C
H:SP
VO-24
MONITOR1,2
MONITOR OUT
REF SYNC
CP-141
CN1004 VIDEO IN
CN1006 VIDEO OUT
CN1003 MONITOR VIDEO
CN1001 MONITOR TV
CN1002 MONITOR AUDIO
CN1014 DUB OUT
CN1005 SYNC IN
DUB OUT SELECT
SW-347(2/2)
A/D CONV
Y NOISE REDUCER (NOT USE)
CHROMA NOISE REDUCER
BITS FIELD MEMORY
Y ENHANCER (NOT USE)
CHROMA ENCODER
D/A CONV
Y(CNR)
C(CNR)
SYSTEM CLOCK 4fc
SYSTEM CLOCK 910fc
WRITE TIMING PULSE GENERATOR
WRITE TIMING CONTROL
READ TIMING PULSE GENERATOR
READ TIMING CONTROL
REF SYNC
C SYNC
*DUS-309
CNR SYNC
CNR SIRIAL DATA
SP/LP PEAK DET
CAPSTAN FG A,B
PLL
COMP CTL
FG COMP AND TAPE DIR DETECT
TAPE DIRECTION
CAPSTAN FG
DI-11
CAPSTAN FG A,B
SP/LP PEAK DET
CH-1/2 MIC
MC-28
CN105 MICROPHONES
PCM L,R(REC)
PCM L,R(PB)
STD(REC)
STB(PB)
PCM L-CH
PCM R-CH
STD
STD/PCM MIX REC AMP
PCM(L)
PCM(R)
OUTPUT SELECT
STD SELECT A,B
AUDIO LIMITER
CH-1 REC LEVEL
CH-2 REC LEVEL
SW-346(1/2)
CH-1 LINE/MIC SELECT
CH-2 LINE/MIC SELECT
CH-1 AUDIO
CH-1 MIC
CH-2 AUDIO
INPUT LEVEL SELECT
CH-1/L
CH-2/R
AA-16
CN1007 CH-1/L
CN1008 CH-2/R
AUDIO LEVEL IN
PCM (L),(R)
STD/PCM MIX PB AMP
MIX
AUDIO MUTE
OUTPUT SELECT
CH-1 PB LEVEL
CH-2 PB LEVEL
PB OUTPUT AMP
CN1009 CH-1/L
CN1010 CH-2/R
AUDIO LEVEL OUT
HP-42
AUDIO SELECT A,B
AFM INPUT SELECT
AUDIO LIMITER
OUTPUT SELECT
SW-347(1/2)
SEARCH MUTE
PCM MUTE
TRANGENT MUTE
PCM L/R-CH
METER SELECT
METER DRIVE
HEADPHONES /MONITOR AMP
CH-1/2
AU-127
HEADPHONES SELECT
MONITOR SELECT
HEADPHONES LEVEL
HEADPHONES
MONITOR OUT
SW-346(2/2)
CH-1/2 METER
MT-57
CH-1
CH-2
AUDIO LEVEL
VIDEO MUTE
CORE SERIAL DATA
L:POWER ON
REMOTE 1 9P
RM-66
REMOTE /LOCAL SW
SW-348
SEARCH DIAL CONTROL
PTC-32
8 BIT FUNCTION MICRO COMPUTOR
DISPLAY DRIVER
DISPLAY
DD-12
DP-101
MATRIX ILED'S DRIVER
FUNCTION LED'S
KY-162
LP-52
KEY SERIAL DATA
REMOTE DATA CONTROL
KEY SERIAL DATA CONTROL
ROM/RAM
SIO
MODE CONTROLLER
VIDEO CONTROL SIGNALS
AUDIO CONTROL SIGNALS
CS1001 DEW SENSOR
PORT EXPANDER
BKU-703A
REF
PB
H:HI BAND
H:CNR ON
COMP CTL
TAPE DIRECTION
SERCH MUTE
PCM MUTE
TRANGENT MUTE
VIDEO MUTE
SYSTEM CONTROLLER
DATA MEMORY
FRAME PULSE GENERATOR
EXT REFV
CHARACTORSE GENERATOR
REF SYNC
PB SYNC
CHARA SIG
CHARA BACK
REF SYNC
C SYNC
CNR SYNC
CNR SIRIAL DATA
CORE SERIALDATA
CORE DECK SIELAL DATA CPU
CTL CONTROLLER
CAPSTAN FG
CTL COUNTER
TIMING CONTROL
SY-145
J MODEL ONLY
CN1001 AC IN
AC OUT
US MODEL ONLY
REG +12V
REG +9V
REG +7V
REG +5V(A)
REG +5V(D)
REG -9V
SYS +12V
DRIVE +9V
DRIVE +5V
VOLTAGE REGULATOR
L:POWER ON
DC-45
REG+12V
REG+7V
SYS+12V
SW REGULATOR
UR-14
S1001 POWER SW
AC-65

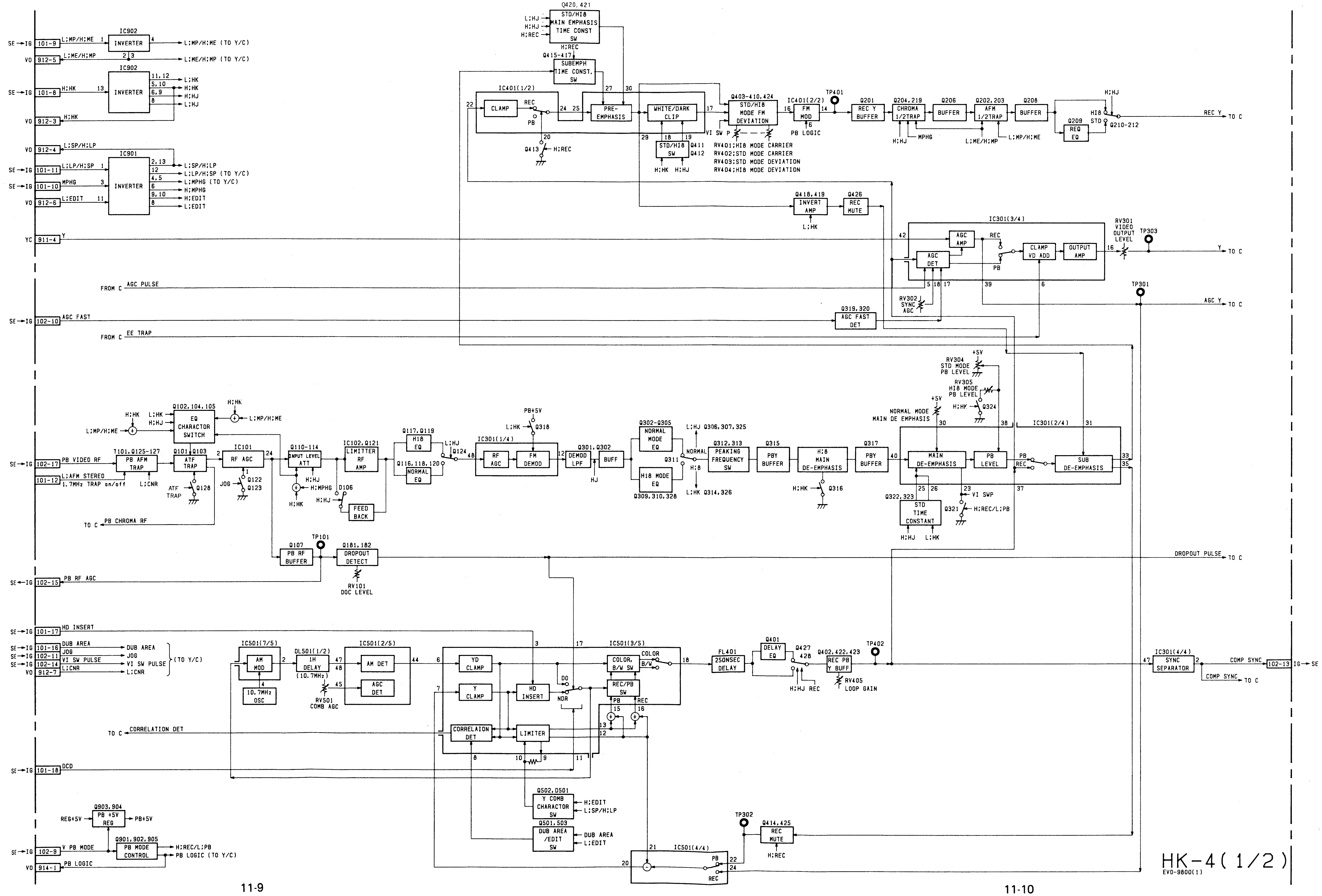
OVERALL(2/2)

EVO-9800

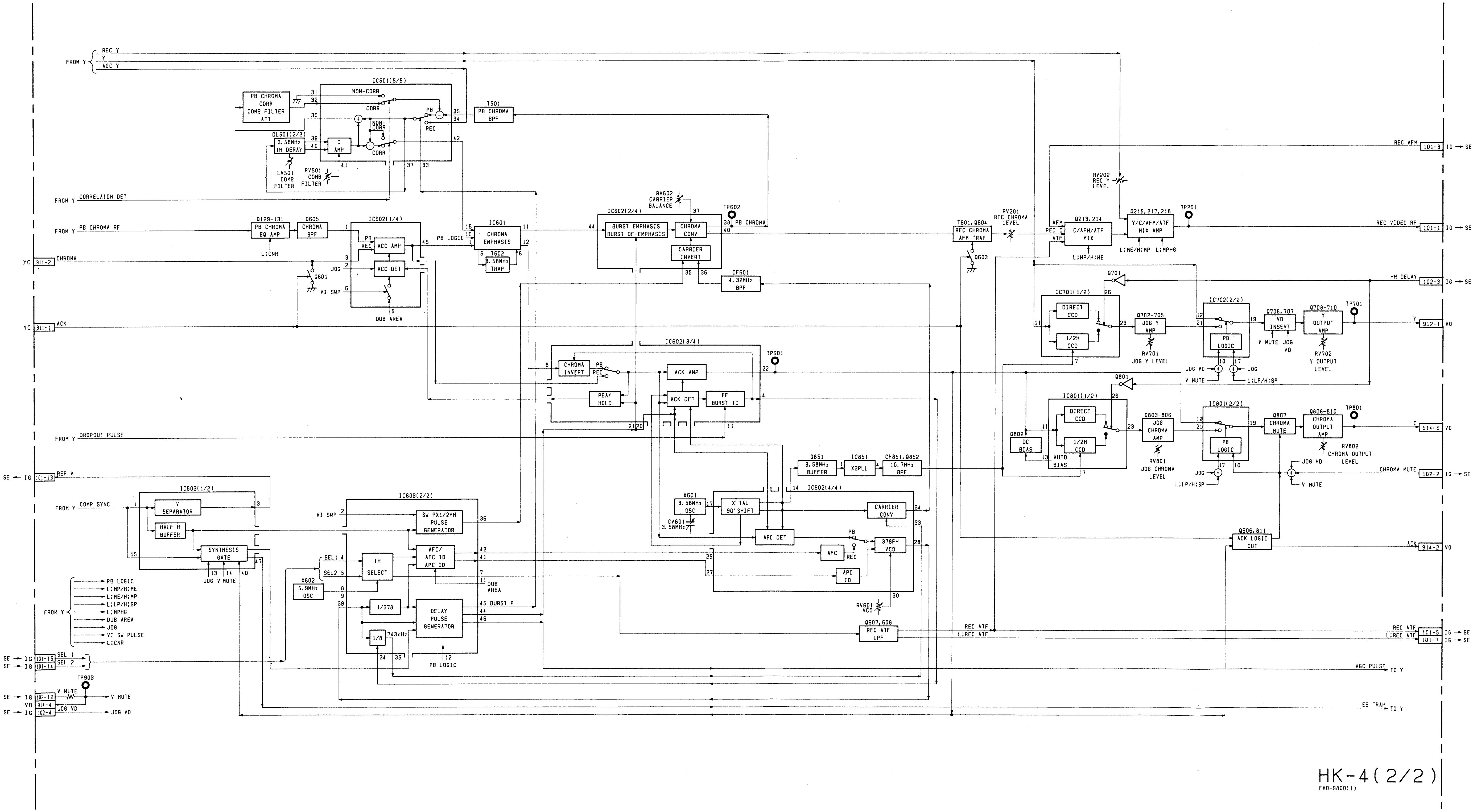
* marked board are for Serial No.up to 10060.(J)

Serial No.up to 10340.(UC)

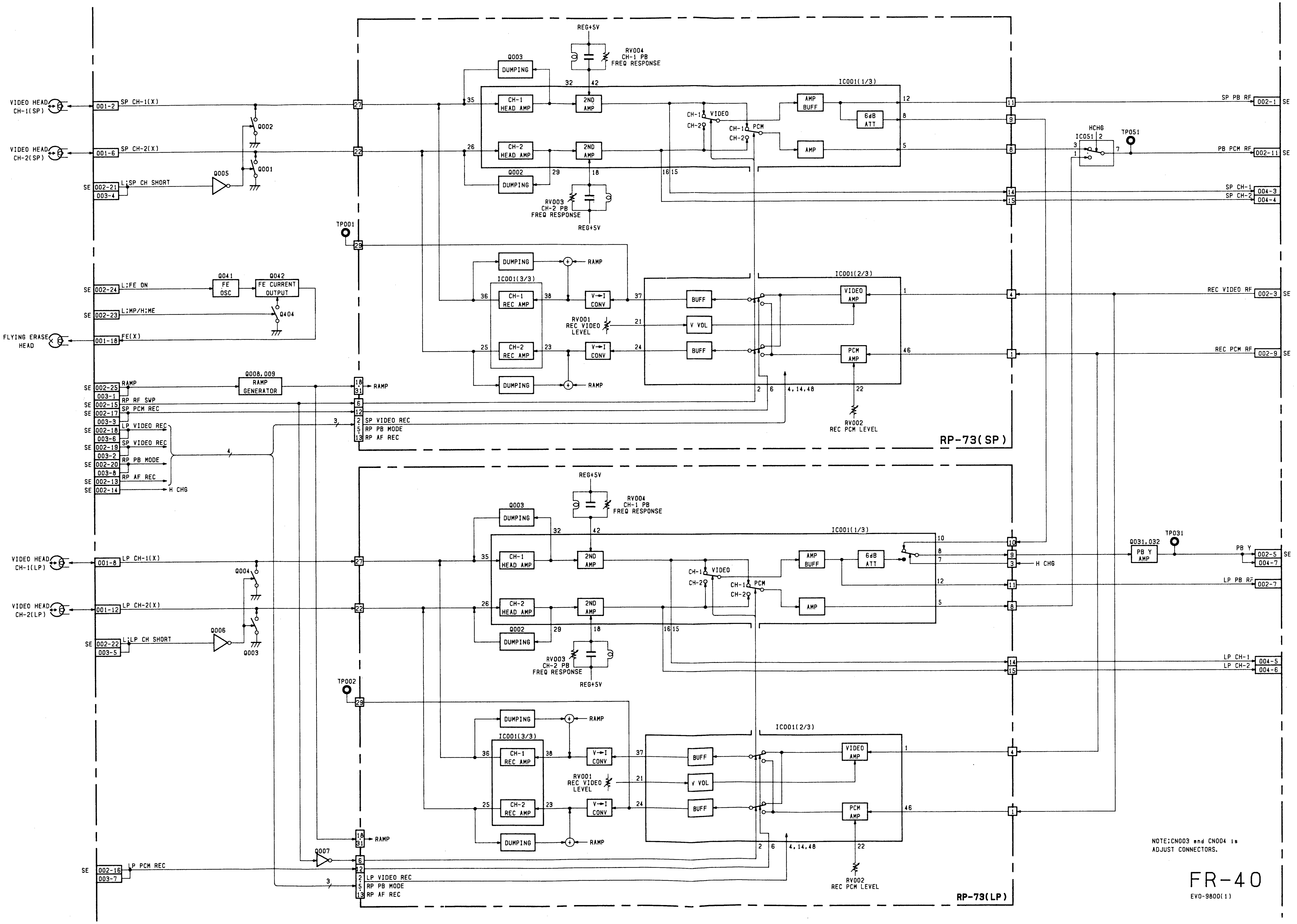
Y PROCESS


IC902
INVERTER
L:MP/H:ME
L:ME/H:MP
L:MP/H:ME (TO Y/C)
L:ME/H:MP (TO Y/C)
H:HK
L:HK
H:HJ
L:HJ
IC901
L:SP/H:LP
L:LP/H:SP
MPHG
L:EDIT
L:LP/H:SP (TO Y/C)
L:MPHG (TO Y/C)
H:MPHG
H:EDIT
SE→IG 101-9
VO 912-5
SE→IG 101-8
VO 912-3
VO 912-4
SE→IG 101-11
SE→IG 101-10
VO 912-6
YC 911-4
Y
FROM C AGC PULSE
SE→IG 102-10 AGC FAST
FROM C EE TRAP
SE→IG 102-17 PB VIDEO RF
101-12 L:AFM STEREO
1.7MHz TRAP on/off
TO C PB CHROMA RF
SE←IG 102-15 PB RF AGC
SE→IG 101-17 HD INSERT
SE→IG 101-16 DUB AREA
SE→IG 102-11 JOG
SE→IG 102-14 VI SW PULSE
VO 912-7 L:CNR
(TO Y/C)
TO C CORRELATION DET
SE→IG 101-18 DCD
REG+5V
Q903,904 PB +5V REG
PB+5V
SE→IG 102-9 V PB MODE
Q901,902,905 PB MODE CONTROL
H:REC/L:PB
PB LOGIC (TO Y/C)
VO 914-1 PB LOGIC
Q420,421 STD/HI8 MAIN EMPHASIS TIME CONST SW
L:HJ
H:HJ
H:REC
Q415-417 SUBEMPH TIME CONST. SW
IC401(1/2)
CLAMP
REC
PB
PRE-EMPHASIS
WHITE/DARK CLIP
STD/HI8 SW
Q411
Q412
H:HK H:HJ
Q413 H:REC
Q403-410,424 STD/HI8 MODE FM DEVIATION
VI SW P
RV401:HI8 MODE CARRIER
RV402:STD MODE CARRIER
RV403:STD MODE DEVIATION
RV404:HI8 MODE DEVIATION
IC401(2/2) FM MOD
PB LOGIC
TP401
Q201 REC Y BUFFER
Q204,219 CHROMA 1/2TRAP
Q206 BUFFER
Q202,203 AFM 1/2TRAP
Q208 BUFFER
Q209 REQ EQ
HI8 STD
Q210-212
H:HJ
MPHG
L:ME/H:MP
L:MP/H:ME
REC Y TO C
Q418,419 INVERT AMP
Q426 REC MUTE
L:HK
IC301(3/4)
AGC AMP
AGC DET
CLAMP VD ADD
OUTPUT AMP
RV301 VIDEO OUTPUT LEVEL
TP303
Y TO C
RV302 SYNC AGC
Q319,320 AGC FAST DET
TP301
AGC Y TO C
RV304 STD MODE PB LEVEL
RV305 HI8 MODE PB LEVEL
+5V
NORMAL MODE MAIN DE EMPHASIS
Q324
IC301(2/4)
MAIN DE-EMPHASIS
PB LEVEL
SUB DE-EMPHASIS
Q322,323 STD TIME CONSTANT
Q321 H:REC/L:PB
VI SWP
H:HJ L:HK
Q102,104,105 EQ CHARACTOR SWITCH
H:HK L:HK H:HJ
L:MP/H:ME
T101,Q125-127 PB AFM TRAP
Q101,Q103 ATF TRAP
ATF TRAP
Q128
L:CNR
IC101 RF AGC
JOG
Q122 Q123
Q110-114 INPUT LEVEL ATT
H:HJ H:MPHG
H:HK
D106
FEED BACK
IC102,Q121 LIMITTER RF AMP
Q117,Q119 HI8 EQ
Q116,118,120 NORMAL EQ
L:HJ Q124
IC301(1/4) RF AGC FM DEMOD
PB+5V Q318
Q301,Q302 DEMOD LPF
BUFF
HJ
Q302-Q305 NORMAL MODE EQ
HI8 MODE EQ
Q309,310,328
L:HJ Q306,307,325
Q311 NORMAL H:8
L:HK Q314,326
Q312,313 PEAKING FREQUENCY SW
Q315 PBY BUFFER
H:8 MAIN DE-EMPHASIS
H:HK Q316
Q317 PBY BUFFER
Q107 PB RF BUFFER
TP101
Q181,182 DROPOUT DETECT
RV101 DOC LEVEL
DROPOUT PULSE TO C
IC501(7/5) AM MOD
10.7MHz OSC
DL501(1/2) 1H DELAY (10.7MHz)
RV501 COMB AGC
IC501(2/5) AM DET AGC DET
IC501(3/5)
YD CLAMP
Y CLAMP
HD INSERT
DO NOR
COLOR, B/W SW
COLOR B/W
REC/PB SW
CORRELAION DET
LIMITER
Q502,D501 Y COMB CHARACTOR SW
H:EDIT L:SP/H:LP
Q501,503 DUB AREA /EDIT SW
DUB AREA L:EDIT
IC501(4/4)
FL401 250NSEC DELAY
Q401 DELAY EQ
Q427 428
H:HJ REC
Q402,422,423 REC PB Y BUFF
RV405 LOOP GAIN
TP402
TP302
Q414,425 REC MUTE
H:REC
IC301(4/4) SYNC SEPARATOR
COMP SYNC 102-13 IG→SE
COMP SYNC TO C
HK-4(1/2)
EVO-9800(1)

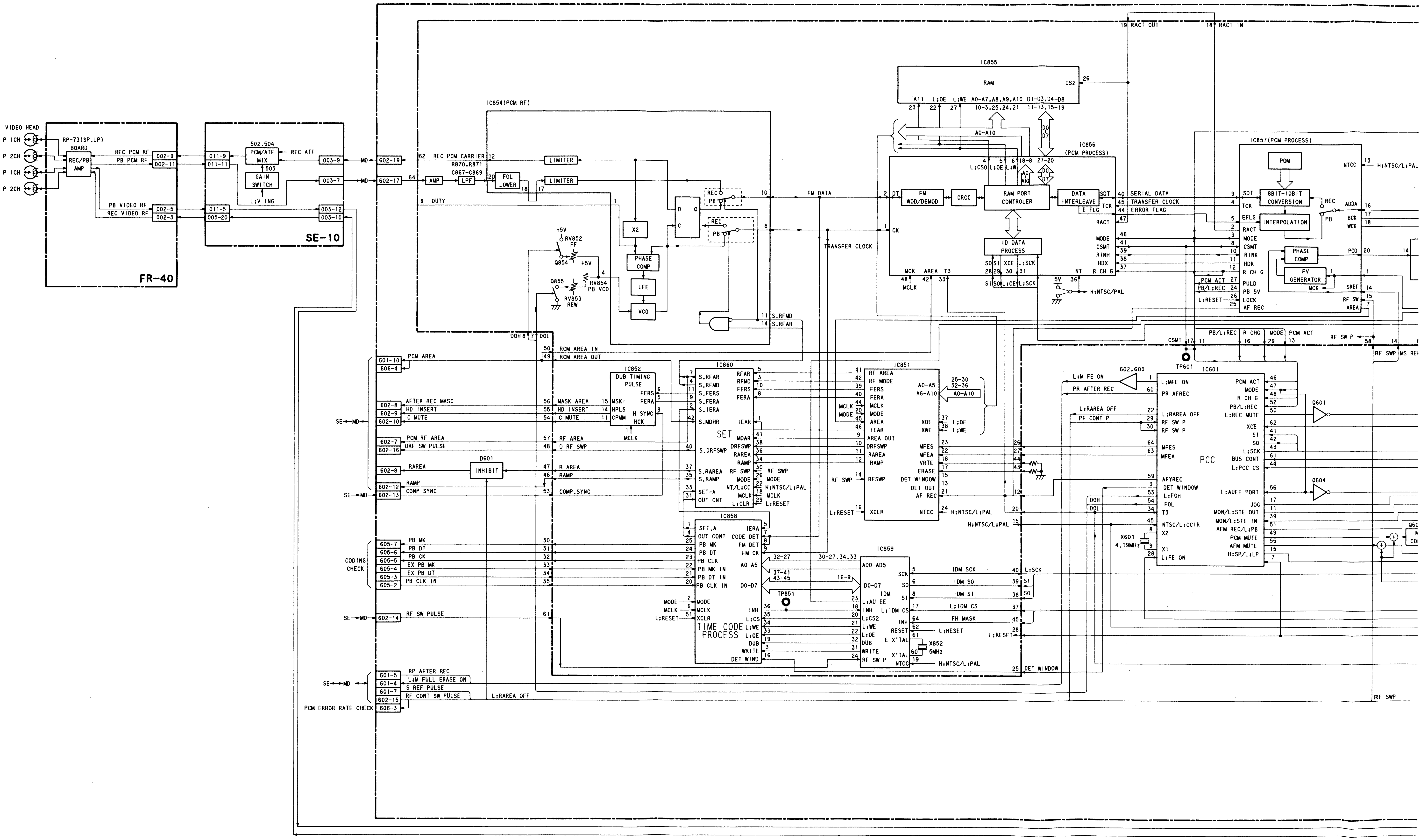
CHROMA PROCESS

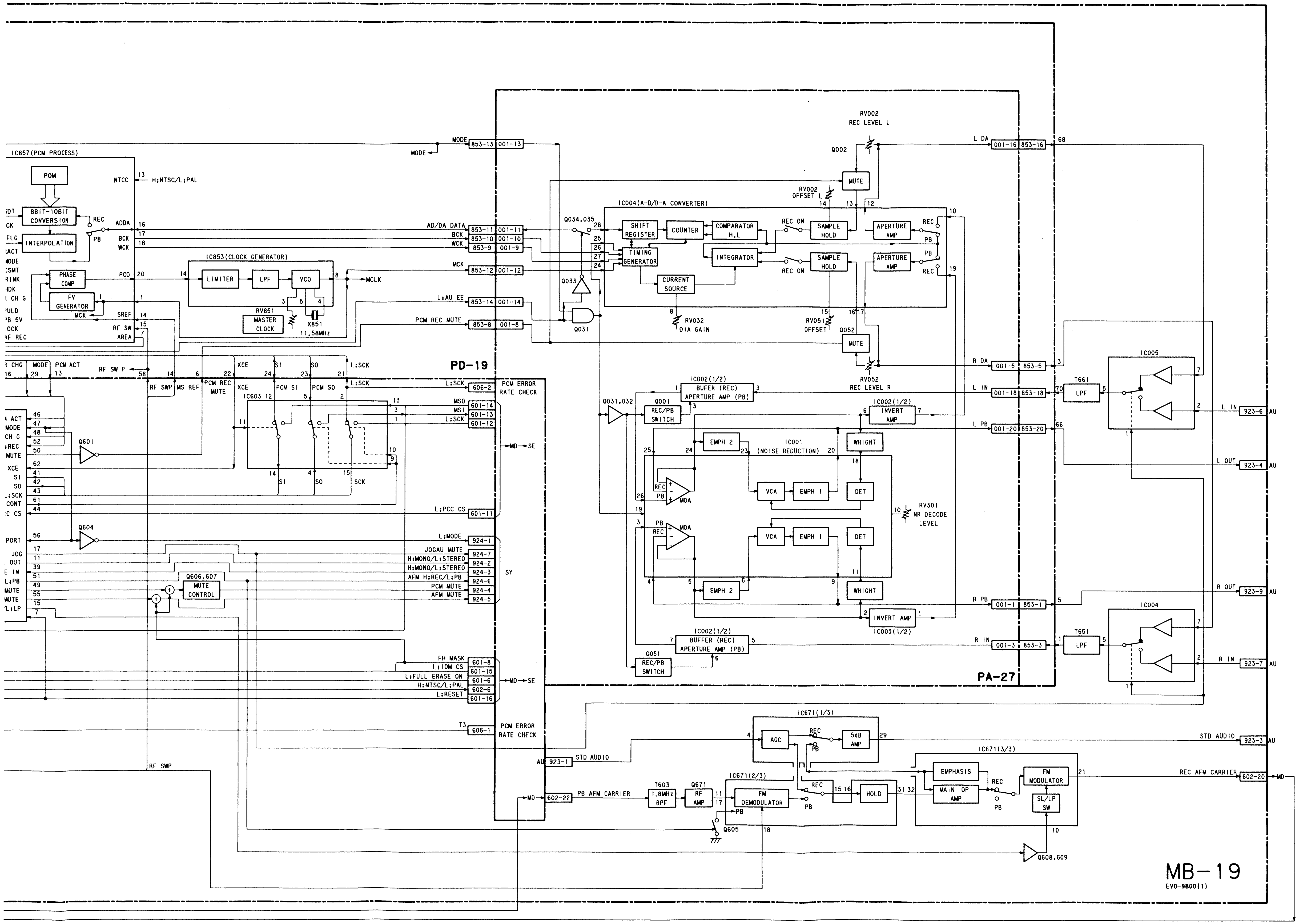

FROM Y
REC Y
Y
AGC Y
IC501(5/5)
PB CHROMA CORR COMB FILTER ATT
NON-CORR
CORR
NON-CORR
PB
REC
T501
PB CHROMA BPF
DL501(2/2)
3.58MHz 1H DERAY
C AMP
LV501 COMB FILTER
RV501 COMB FILTER
CORRELAION DET
Q129-131
PB CHROMA EQ AMP
L:CNR
Q605
CHROMA BPF
IC602(1/4)
ACC AMP
ACC DET
JOG
VI SWP
DUB AREA
Q601
PB LOGIC
IC601
CHROMA EMPHASIS
T602
3.58MHz TRAP
RV602
CARRIER BALANCE
IC602(2/4)
BURST EMPHASIS BURST DE-EMPHASIS
CHROMA CONV
CARRIER INVERT
TP602
PB CHROMA
CF601
4.32MHz BPF
YC 911-2
CHROMA
PB CHROMA RF
YC 911-1
ACK
IC602(3/4)
CHROMA INVERT
ACK AMP
ACK DET
PEAK HOLD
FF BURST ID
TP601
DROPOUT PULSE
SE ← IG 101-13
REF V
IC603(1/2)
COMP SYNC
V SEPARATOR
HALF H BUFFER
SYNTHESIS GATE
JOG V MUTE
IC603(2/2)
VI SWP
SW PX1/2fH PULSE GENERATOR
AFC/ AFC ID APC ID
fH SELECT
SEL1
SEL2
X602
5.9MHz OSC
1/378
1/8
743kHz
DELAY PULSE GENERATOR
DUB AREA
BURST P
PB LOGIC
Q851
3.58MHz BUFFER
IC851
X3PLL
CF851, Q852
10.7MHz BPF
IC602(4/4)
X601
3.58MHz OSC
CV601
3.58MHz
X'TAL 90° SHIFT
CARRIER CONV
APC DET
AFC
APC ID
378FH VCO
RV601 VCO
Q607,608
REC ATF LPF
PB LOGIC
L:MP/H:ME
L:ME/H:MP
L:LP/H:SP
L:MPHG
DUB AREA
JOG
VI SW PULSE
L:CNR
SE → IG 101-15
SE → IG 101-14
SEL 1
SEL 2
TP903
SE → IG 102-12
V MUTE
VO 914-4
SE → IG 102-4
JOG VD
V MUTE
JOG VD
T601,Q604
REC CHROMA AFM TRAP
RV201
REC CHROMA LEVEL
Q603
Q213,214
C/AFM/ATF MIX
L:MP/H:ME
AFM
REC C
ATF
RV202
REC Y LEVEL
Q215,217,218
Y/C/AFM/ATF MIX AMP
L:ME/H:MP
L:MPHG
TP201
REC AFM
101-3 IG → SE
REC VIDEO RF
101-1 IG → SE
HH DELAY
102-3 IG → SE
Q701
IC701(1/2)
DIRECT CCD
1/2H CCD
Q702-705
JOG Y AMP
RV701
JOG Y LEVEL
IC702(2/2)
PB LOGIC
JOG VD
JOG
V MUTE
L:LP/H:SP
Q706,707
VD INSERT
V MUTE
JOG VD
Q708-710
Y OUTPUT AMP
RV702
Y OUTPUT LEVEL
TP701
Y
912-1 VO
Q801
IC801(1/2)
DIRECT CCD
1/2H CCD
Q802
DC BIAS
AUTO BIAS
Q803-806
JOG CHROMA AMP
RV801
JOG CHROMA LEVEL
IC801(2/2)
PB LOGIC
JOG
L:LP/H:SP
Q807
CHROMA MUTE
Q808-810
CHROMA OUTPUT AMP
RV802
CHROMA OUTPUT LEVEL
TP801
C
914-6 VO
JOG VD
V MUTE
CHROMA MUTE
102-2 IG → SE
Q606,811
ACK LOGIC OUT
ACK
914-2 VO
REC ATF
L:REC ATF
REC ATF
L:REC ATF
101-5 IG → SE
101-7 IG → SE
AGC PULSE TO Y
EE TRAP TO Y
HK-4(2/2)
EVO-9800(1)

REC/PB HEAD AMP

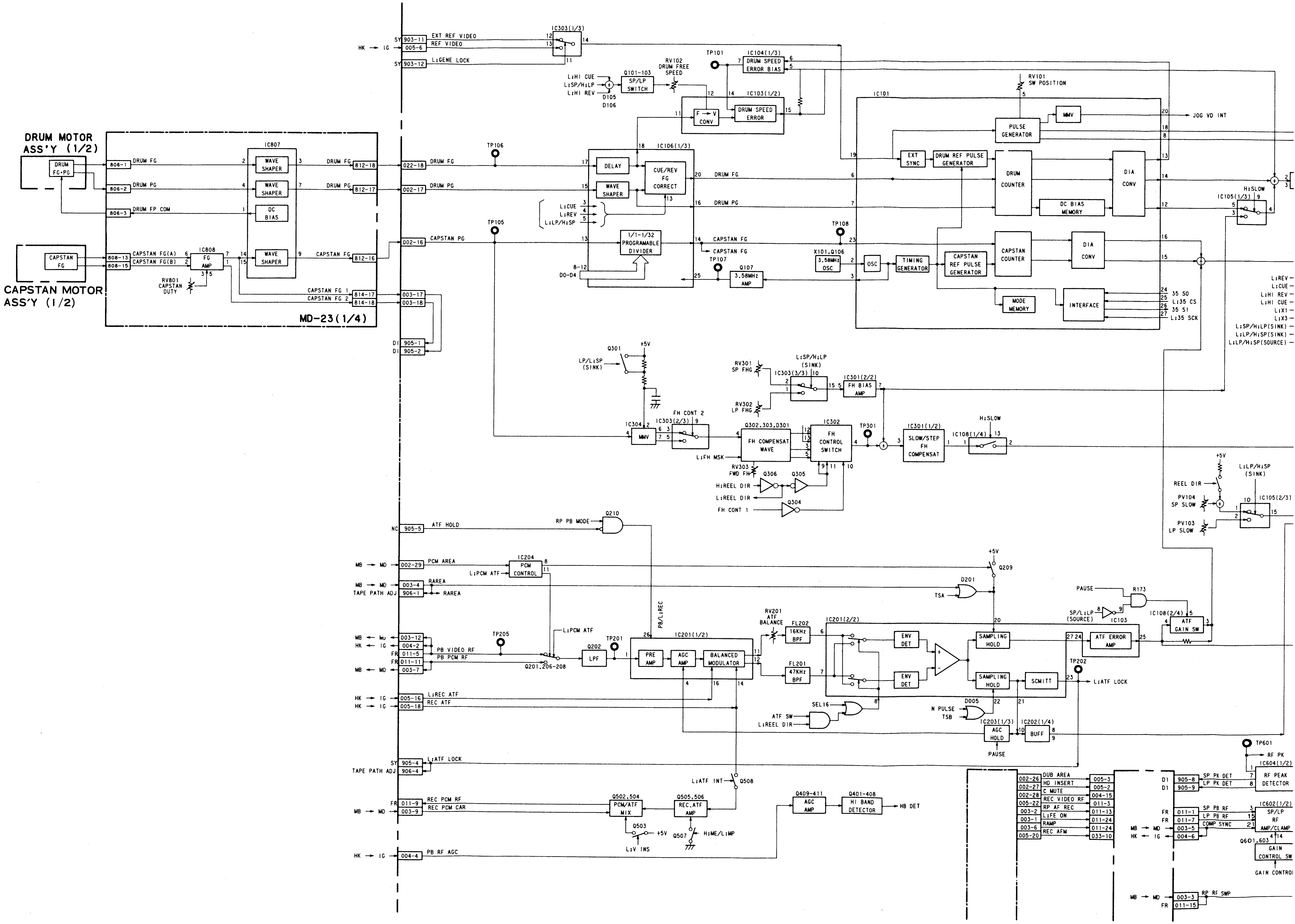

VIDEO HEAD CH-1(SP)
VIDEO HEAD CH-2(SP)
001-2
001-6
SP CH-1(X)
SP CH-2(X)
Q002
Q001
Q005
L:SP CH SHORT
002-21
003-4
SE
TP001
002-24
L:FE ON
Q041
FE OSC
Q042
FE CURRENT OUTPUT
002-23
L:MP/H:ME
Q404
FLYING ERASE HEAD
001-18
FE(X)
002-25
RAMP
Q008,009
RAMP GENERATOR
003-1
RP RF SWP
002-15
SP PCM REC
002-17
003-3
LP VIDEO REC
002-18
003-6
SP VIDEO REC
002-19
003-2
RP PB MODE
002-20
003-8
RP AF REC
002-13
002-14
H CHG
SP VIDEO REC
RP PB MODE
RP AF REC
REG+5V
RV004
CH-1 PB FREQ RESPONSE
Q003
DUMPING
CH-1 HEAD AMP
CH-2 HEAD AMP
2ND AMP
IC001(1/3)
CH-1 VIDEO
CH-2
CH-1 PCM
CH-2
AMP BUFF
6dB ATT
AMP
Q002
RV003
CH-2 PB FREQ RESPONSE
IC001(3/3)
CH-1 REC AMP
CH-2 REC AMP
V→I CONV
RV001
REC VIDEO LEVEL
IC001(2/3)
BUFF
V VOL
VIDEO AMP
PCM AMP
RV002
REC PCM LEVEL
RP-73(SP)
HCHG
IC051
TP051
SP PB RF
002-1
PB PCM RF
002-11
SP CH-1
004-3
SP CH-2
004-4
REC VIDEO RF
002-3
REC PCM RF
002-9
VIDEO HEAD CH-1(LP)
VIDEO HEAD CH-2(LP)
001-8
001-12
LP CH-1(X)
LP CH-2(X)
Q004
Q006
Q003
L:LP CH SHORT
002-22
003-5
TP002
Q007
002-16
003-7
LP PCM REC
LP VIDEO REC
RP PB MODE
RP AF REC
RP-73(LP)
Q031,032
PB Y AMP
TP031
PB Y
002-5
004-7
H CHG
LP PB RF
002-7
LP CH-1
004-5
LP CH-2
004-6
NOTE:CN003 and CN004 is ADJUST CONNECTORS.
FR-40
EVO-9800(1)

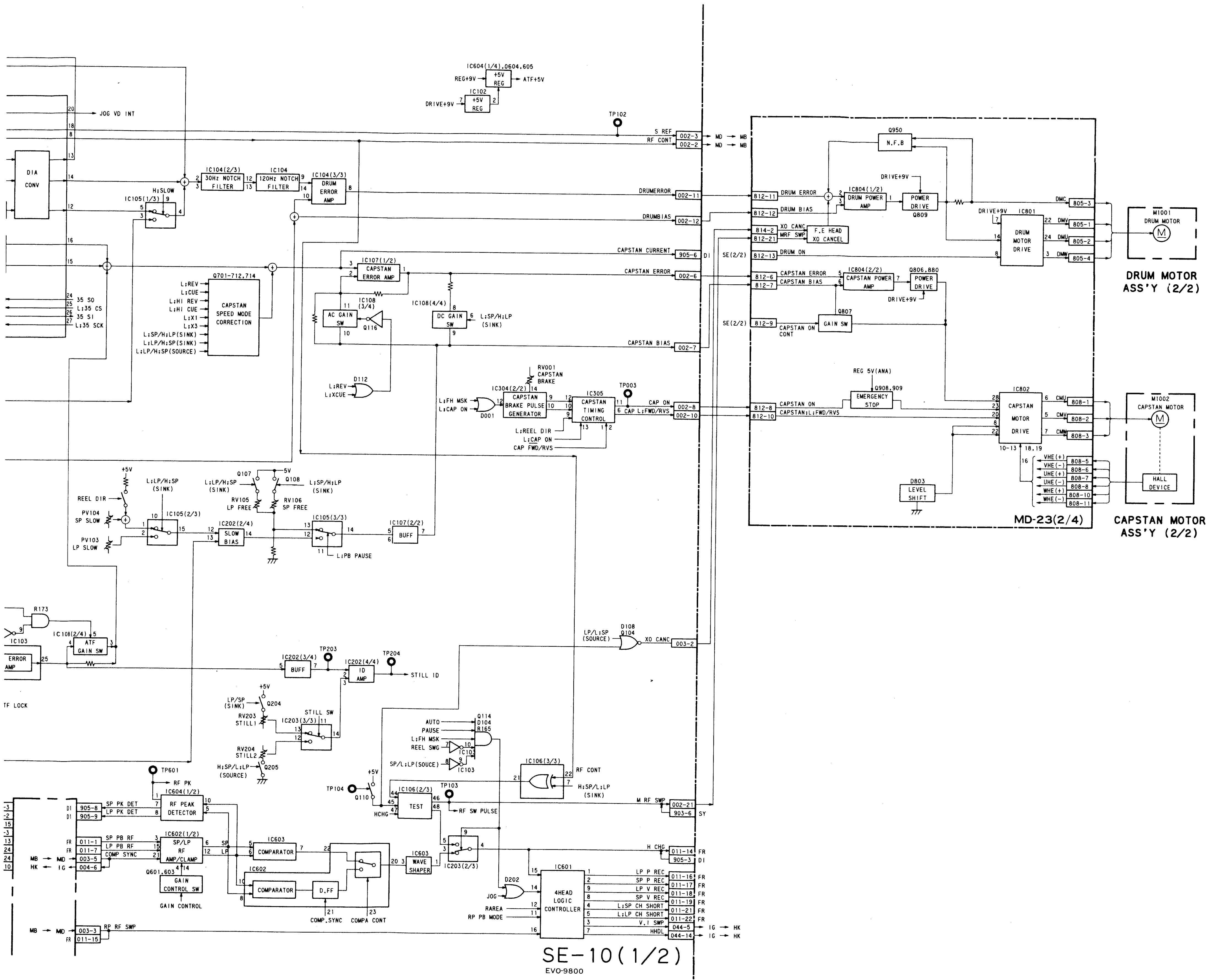
PCM AUDIO


VIDEO HEAD
P 1CH
P 2CH
P 1CH
P 2CH
RP-73(SP.LP) BOARD
REC/PB AMP
REC PCM RF
PB PCM RF
PB VIDEO RF
REC VIDEO RF
002-9
002-11
002-5
002-3
FR-40
011-9
011-11
011-5
005-20
502,504
PCM/ATF MIX
REC ATF
503
GAIN SWITCH
L;V ING
003-9
003-7
003-12
003-10
SE-10
MD
602-19
602-17
IC854(PCM RF)
REC PCM CARRIER
R870,R871
C867-C869
AMP
LPF
FOL LOWER
LIMITER
LIMITER
DUTY
X2
PHASE COMP
LFE
VCO
D Q
C
REC
PB
+5V
RV852 FF
Q854
Q855
RV853 REW
RV854 PB VCO
FM DATA
TRANSFER CLOCK
S.RFMD
S.RFAR
DOH
DOL
RCM AREA IN
RCM AREA OUT
IC855
RAM
CS2
A11 L;OE L;WE A0-A7,A8,A9,A10 D1-D3,D4-D8
10-3,25,24,21
11-13,15-19
A0-A10
D0-D7
IC856 (PCM PROCESS)
L;CS0 L;OE L;W
DT
CK
FM WOD/DEMOD
CRCC
RAM PORT CONTROLER
DATA INTERLEAVE
SDT
TCK
E FLG
RACT
MODE
CSMT
RINH
HDX
R CH G
ID DATA PROCESS
SO SI XCE L;SCK
MCK AREA T3
MCLK
NT
5V
H;NTSC/PAL
19 RACT OUT
18 RACT IN
SERIAL DATA
TRANSFER CLOCK
ERROR FLAG
IC857(PCM PROCESS)
POM
8BIT-10BIT CONVERSION
INTERPOLATION
PHASE COMP
FV GENERATOR
NTCC
H;NTSC/L;PAL
ADDA
BCK
WCK
PCO
SREF
RF SW
AREA
EFLG
RINK
HDK
PULD
PB 5V
LOCK
AF REC
PCM ACT
PB/L;REC
L;RESET
R CHG
RF SW P
RF SWP
MS REF
TP601
CSMT
PCM AREA
601-10
606-4
602-8
602-9
602-10
AFTER REC MASC
HD INSERT
C MUTE
SE MD
602-7
602-16
PCM RF AREA
DRF SW PULSE
602-8
RAREA
D601
INHIBIT
602-12
602-13
RAMP
CONP SYNC
MASK AREA
HD INSERT
C MUTE
RF AREA
D RF SWP
R AREA
RAMP
COMP.SYNC
IC852
DUB TIMING PULSE
MSKI
HPLS
CPMM
FERS
FERA
H SYNC
HCK
MCLK
IC860
SET
S.RFAR
S.RFMD
S.FERS
S.FERA
S.IERA
S.MDHR
S.DRFSWP
S.RAREA
S.RAMP
SET-A
OUT CNT
RFAR
RFMD
FERS
FERA
IEAR
MDAR
DRFSWP
RAREA
RAMP
RF SWP
MODE
NT/L;CC
MCLK
L;CLR
H;NTSC/L;PAL
L;RESET
IC851
RF AREA
RF MODE
AREA OUT
RFSWP
XCLR
A0-A5
A6-A10
25-30
32-36
XOE
XWE
L;OE
L;WE
MFES
MFEA
VRTE
ERASE
DET WINDOW
DET OUT
AF REC
NTCC
CODING CHECK
605-7
605-6
605-5
605-4
605-3
605-2
PB MK
PB DT
PB CK
EX PB MK
EX PB DT
PB CLK IN
IC858
TIME CODE PROCESS
SET.A
OUT CONT
PB MK
PB DT
PB CLK
PB MK IN
PB DT IN
PB CLK IN
MODE
MCLK
XCLR
IERA
CODE DET
FM DET
FM CK
A0-A5
D0-D7
INH
L;CS
L;WE
L;OE
DUB
WRITE
DET WIND
32-27
37-41
43-45
30-27,34,33
16-9
TP851
IC859
AD0-AD5
D0-D7
IDM
L;AU EE
INH
L;CS2
L;WE
L;OE
DUB
WRITE
RF SW P
SCK
SO
SI
L;IDM CS
INH
RESET
E X'TAL
X'TAL
NTCC
X852 5MHz
IDM SCK
IDM SO
IDM SI
L;IDM CS
FH MASK
L;SCK
SI
SO
DET WINDOW
602-14
RF SW PULSE
601-5
601-4
601-7
602-15
606-3
RP AFTER REC
L;M FULL ERASE ON
S REF PULSE
RF CONT SW PULSE
L;RAREA OFF
PCM ERROR RATE CHECK
602,603
IC601
PCC
L;M FE ON
PR AFTER REC
L;RAREA OFF
PF CONT P
L;MFE ON
PR AFREC
RF SW P
MFES
MFEA
AFYREC
DET WINDOW
L;FOH
FOL
T3
NTSC/L;CCIR
X2
X1
L;FE ON
X601 4.19MHz
PCM ACT
MODE
R CH G
PB/L;REC
L;REC MUTE
XCE
SI
SO
L;SCK
BUS CONT
L;PCC CS
L;AUEE PORT
JOG
MON/L;STE OUT
MON/L;STE IN
AFM REC/L;PB
PCM MUTE
AFM MUTE
H;SP/L;LP
Q601
Q604
RF SWP

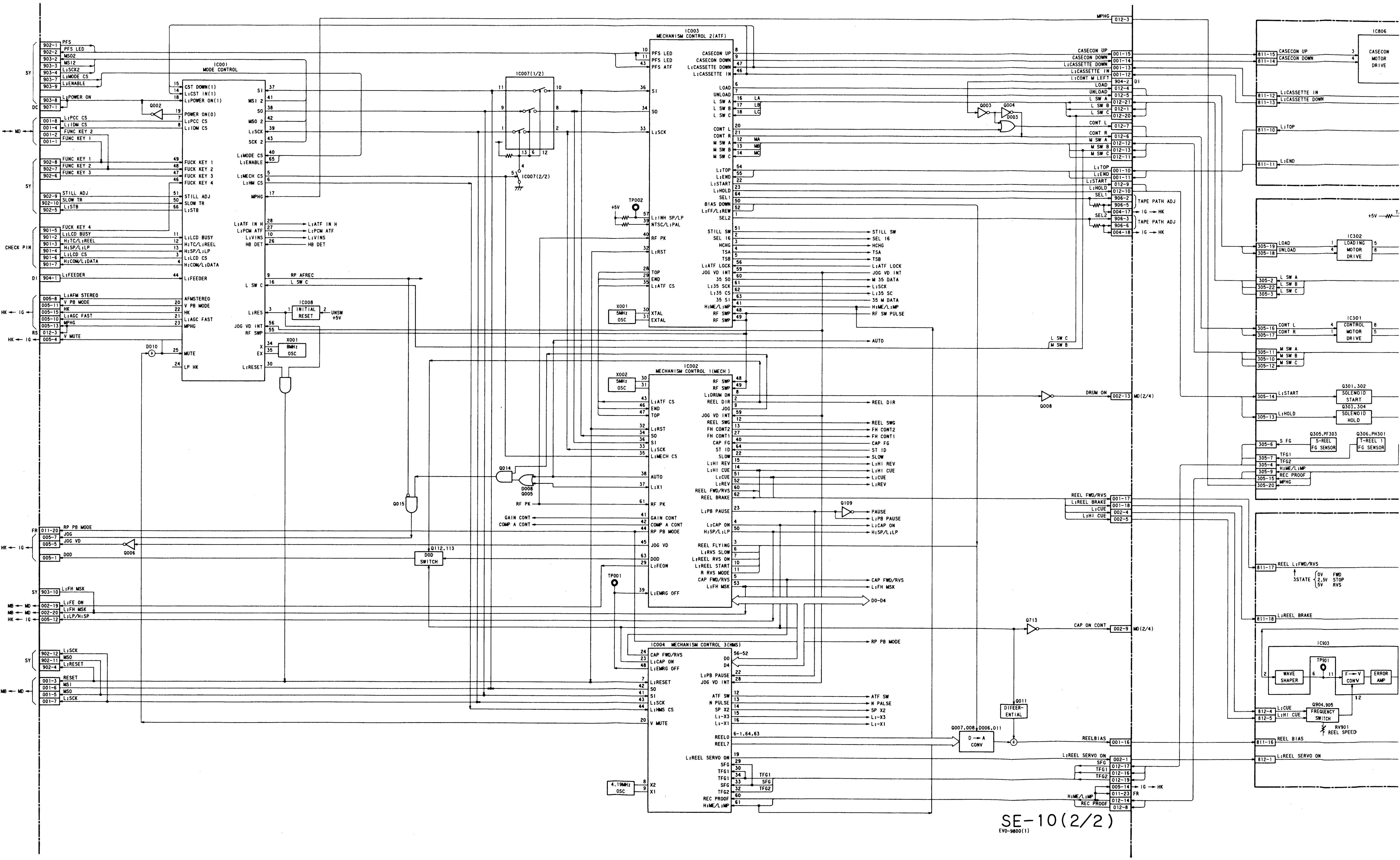

IC857(PCM PROCESS)
PCM
8BIT-10BIT CONVERSION
INTERPOLATION
REC
PB
NTCC
H:NTSC/L:PAL
ADDA
BCK
WCK
PCO
SREF
RF SW
AREA
PHASE COMP
FV GENERATOR
MCK
IC853(CLOCK GENERATOR)
LIMITER
LPF
VCO
RV851 MASTER CLOCK
X851 11.58MHz
MCLK
MODE
AD/DA DATA
L:AU EE
PCM REC MUTE
853-13
001-13
853-11
001-11
853-10
001-10
853-9
001-9
853-12
001-12
853-14
001-14
853-8
001-8
Q034,035
Q033
Q031
IC004(A-D/D-A CONVERTER)
SHIFT REGISTER
COUNTER
COMPARATOR H,L
TIMING GENERATOR
INTEGRATOR
CURRENT SOURCE
REC ON
SAMPLE HOLD
APERTURE AMP
RV032 DIA GAIN
RV002 REC LEVEL L
Q002
MUTE
RV002 OFFSET L
RV051 OFFSET
Q052
RV052 REC LEVEL R
L DA
001-16
853-16
R DA
001-5
853-5
L IN
001-18
853-18
L PB
001-20
853-20
R PB
001-1
853-1
R IN
001-3
853-3
PD-19
PA-27
RF SW P
XCE
SI
SO
L:SCK
PCM REC MUTE
MS REF
RF SWP
IC603
PCM SI
PCM SO
MSO
MSI
601-14
601-13
601-12
606-2
PCM ERROR RATE CHECK
MD
SE
Q601
Q604
L:PCC CS
601-11
L:MODE
924-1
JOGAU MUTE
924-7
H:MONO/L:STEREO
924-2
924-3
AFM H:REC/L:PB
924-6
PCM MUTE
924-4
AFM MUTE
924-5
SY
Q606,607 MUTE CONTROL
FH MASK
601-8
L:IDM CS
601-15
L:FULL ERASE ON
601-6
H:NTSC/L:PAL
602-6
L:RESET
601-16
T3
606-1
AU
923-1
STD AUDIO
602-22
PB AFM CARRIER
Q031,032
Q001 REC/PB SWITCH
IC002(1/2) BUFER (REC) APERTURE AMP (PB)
IC002(1/2) INVERT AMP
EMPH 2
IC001 (NOISE REDUCTION)
WHIGHT
MOA
VCA
EMPH 1
DET
RV301 NR DECODE LEVEL
INVERT AMP
IC003(1/2)
IC002(1/2) BUFFER (REC) APERTURE AMP (PB)
Q051 REC/PB SWITCH
IC005
IC004
T661
T651
LPF
L IN
923-6
L OUT
923-4
R OUT
923-9
R IN
923-7
IC671(1/3)
AGC
5dB AMP
STD AUDIO
923-3
IC671(3/3)
EMPHASIS
MAIN OP AMP
FM MODULATOR
SL/LP SW
REC AFM CARRIER
602-20
IC671(2/3)
FM DEMODULATOR
HOLD
T603 1.8MHz BPF
Q671 RF AMP
Q605
Q608,609
RF SWP
MB-19
EVO-9800(1)

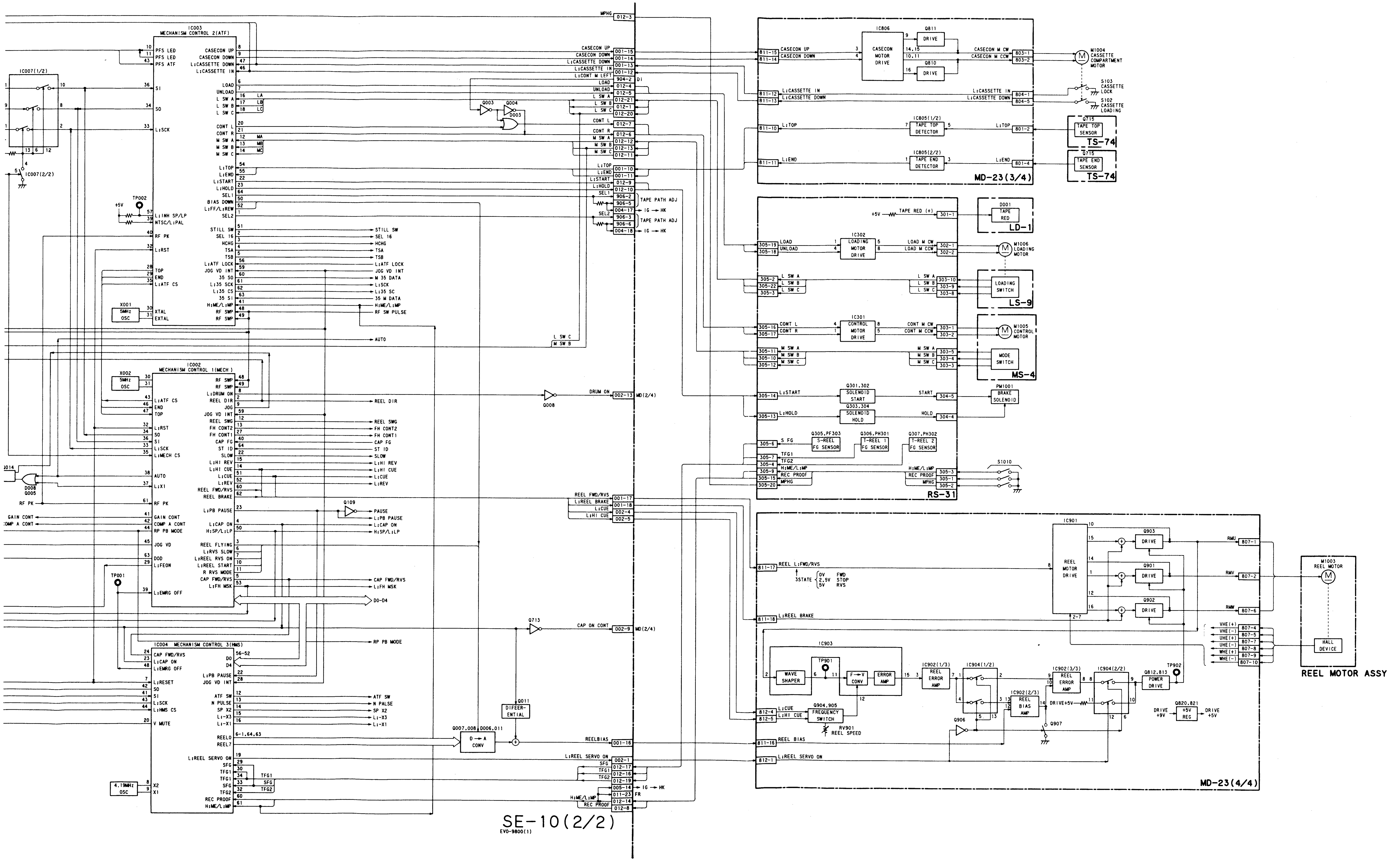
DRUM/CAPSTAN/ATF SERVO


DRUM MOTOR ASS'Y (1/2)
DRUM FG·PG
CAPSTAN FG
CAPSTAN MOTOR ASS'Y (1/2)
MD-23(1/4)
IC807
WAVE SHAPER
DC BIAS
IC808
FG AMP
RV801 CAPSTAN DUTY
DRUM FG
DRUM PG
DRUM FP COM
CAPSTAN FG(A)
CAPSTAN FG(B)
CAPSTAN FG 1
CAPSTAN FG 2
EXT REF VIDEO
REF VIDEO
L:GENE LOCK
IC303(1/3)
TP101
IC104(1/3)
DRUM SPEED ERROR BIAS
RV102 DRUM FREE SPEED
Q101-103
SP/LP SWITCH
L:HI CUE
L:SP/H:LP
L:HI REV
D105
D106
F→V CONV
IC103(1/2)
DRUM SPEED ERROR
IC101
RV101 SW POSITION
PULSE GENERATOR
MMV
JOG VD INT
EXT SYNC
DRUM REF PULSE GENERATOR
DRUM COUNTER
D/A CONV
DC BIAS MEMORY
H:SLOW
IC105(1/3)
TP106
TP105
IC106(1/3)
DELAY
WAVE SHAPER
CUE/REV FG CORRECT
L:CUE
L:REV
L:LP/H:SP
1/1-1/32 PROGRAMABLE DIVIDER
D0-D4
CAPSTAN PG
CAPSTAN FG
TP107
TP108
Q107
3.58MHz AMP
X101,Q106
3.58MHz OSC
OSC
TIMING GENERATOR
CAPSTAN REF PULSE GENERATOR
CAPSTAN COUNTER
MODE MEMORY
INTERFACE
35 SO
L:35 CS
35 SI
L:35 SCK
L:REV
L:CUE
L:HI REV
L:HI CUE
L:X1
L:X3
L:SP/H:LP(SINK)
L:LP/H:SP(SINK)
L:LP/H:SP(SOURCE)
Q301
+5V
LP/L:SP (SINK)
RV301 SP FHG
RV302 LP FHG
L:SP/H:LP (SINK)
IC303(3/3)
IC301(2/2)
FH BIAS AMP
IC304
MMV
IC303(2/3)
FH CONT 2
Q302,303,D301
FH COMPENSAT WAVE
IC302
FH CONTROL SWITCH
TP301
IC301(1/2)
SLOW/STEP FH COMPENSAT
IC108(1/4)
L:FH MSK
RV303 ATF FWD FH
Q306
Q305
Q304
H:REEL DIR
L:REEL DIR
FH CONT 1
REEL DIR
PV104 SP SLOW
PV103 LP SLOW
L:LP/H:SP (SINK)
IC105(2/3)
ATF HOLD
RP PB MODE
Q210
PCM AREA
IC204
PCM CONTROL
L:PCM ATF
RAREA
TAPE PATH ADJ
Q209
D201
TSA
PAUSE
R173
SP/L:LP (SOURCE)
IC103
IC108(2/4)
ATF GAIN SW
PB VIDEO RF
PB PCM RF
TP205
Q201,206-208
Q202
LPF
TP201
IC201(1/2)
PRE AMP
AGC AMP
BALANCED MODULATOR
PB/L:REC
RV201 ATF BALANCE
FL202 16KHz BPF
FL201 47KHz BPF
IC201(2/2)
ENV DET
SAMPLING HOLD
SCMITT
ATF ERROR AMP
TP202
L:ATF LOCK
L:REC ATF
REC ATF
SEL16
ATF SW
L:REEL DIR
D005
N PULSE
TSB
IC203(1/3)
AGC HOLD
IC202(1/4)
BUFF
TP601
RF PK
IC604(1/2)
RF PEAK DETECTOR
SP PK DET
LP PK DET
L:ATF INT
Q508
REC PCM RF
REC PCM CAR
Q502,504
PCM/ATF MIX
Q505,506
REC.ATF AMP
Q503
L:V INS
Q507
H:ME/L:MP
Q409-411
AGC AMP
Q401-408
HI BAND DETECTOR
HB DET
PB RF AGC
DUB AREA
HD INSERT
C MUTE
REC VIDEO RF
RP AF REC
L:FE ON
RAMP
REC AFM
SP PB RF
LP PB RF
COMP SYNC
IC602(1/2)
SP/LP RF AMP/CLAMP
Q601,603
GAIN CONTROL SW
GAIN CONTROL
RP RF SWP
HK → IG
MB → MD
SY
DI
NC
FR

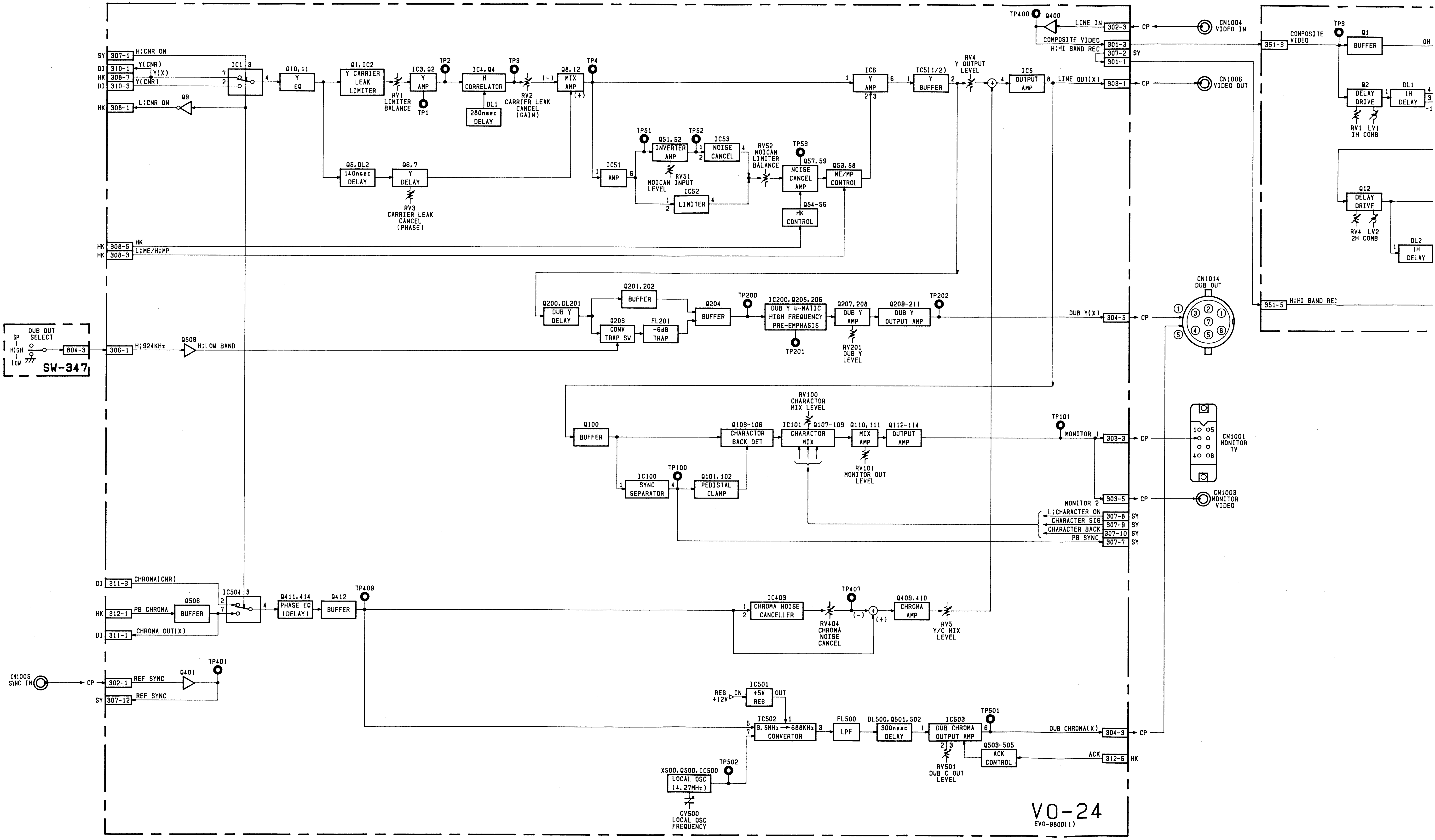

IC604(1/4),Q604,605
REG+9V
+5V REG
ATF+5V
IC102
DRIVE+9V
JOG VD INT
TP102
S REF
RF CONT
D/A CONV
IC104(2/3) 30Hz NOTCH FILTER
IC104 120Hz NOTCH FILTER
IC104(3/3) DRUM ERROR AMP
H;SLOW
IC105(1/3)
DRUMERROR
DRUMBIAS
CAPSTAN CURRENT
CAPSTAN ERROR
CAPSTAN BIAS
IC107(1/2) CAPSTAN ERROR AMP
IC108 (3/4)
AC GAIN SW
Q116
IC108(4/4)
DC GAIN SW
L;SP/H;LP (SINK)
35 SO
L;35 CS
35 SI
L;35 SCK
Q701-712,714
CAPSTAN SPEED MODE CORRECTION
L;REV
L;CUE
L;HI REV
L;HI CUE
L;X1
L;X3
L;SP/H;LP(SINK)
L;LP/H;SP(SINK)
L;LP/H;SP(SOURCE)
D112
L;REV
L;XCUE
RV001 CAPSTAN BRAKE
IC304(2/2)
CAPSTAN BRAKE PULSE GENERATOR
L;FH MSK
L;CAP ON
D001
IC305 CAPSTAN TIMING CONTROL
TP003
CAP ON
CAP L;FWD/RVS
L;REEL DIR
L;CAP ON
CAP FWD/RVS
+5V
L;LP/H;SP (SINK)
Q107
Q108
L;SP/H;LP (SINK)
REEL DIR
PV104 SP SLOW
PV103 LP SLOW
RV105 LP FREE
RV106 SP FREE
IC105(2/3)
IC202(2/4) SLOW BIAS
IC105(3/3)
IC107(2/2) BUFF
L;PB PAUSE
R173
IC108(2/4) ATF GAIN SW
IC103
ERROR AMP
TF LOCK
TP203
IC202(3/4) BUFF
IC202(4/4) ID AMP
TP204
STILL ID
LP/SP (SINK)
Q204
RV203 STILL1
IC203(3/3)
STILL SW
RV204 STILL2
H;SP/L;LP (SOURCE)
Q205
D108 Q104
LP/L;SP (SOURCE)
XO CANC
AUTO
PAUSE
L;FH MSK
REEL SWG
Q114 D104 R165
SP/L;LP(SOUCE)
IC106(3/3)
RF CONT
H;SP/L;LP (SINK)
TP601
RF PK
IC604(1/2) RF PEAK DETECTOR
SP PK DET
LP PK DET
TP104
Q110
HCHG
IC106(2/3) TEST
TP103
RF SW PULSE
M RF SWP
IC602(1/2) SP/LP RF AMP/CLAMP
SP PB RF
LP PB RF
COMP SYNC
Q601,603
GAIN CONTROL SW
GAIN CONTROL
IC603 COMPARATOR
IC602 COMPARATOR
D.FF
COMP.SYNC
COMPA CONT
IC603 WAVE SHAPER
IC203(2/3)
H CHG
D202
JOG
RAREA
RP PB MODE
IC601 4HEAD LOGIC CONTROLLER
LP P REC
SP P REC
LP V REC
SP V REC
L;SP CH SHORT
L;LP CH SHORT
V.1 SWP
HHDL
RP RF SWP
MB
MD
HK
IG
SE-10(1/2)
EVO-9800
Q950 N.F.B
DRIVE+9V
DRUM ERROR
DRUM BIAS
IC804(1/2) DRUM POWER AMP
POWER DRIVE
Q809
XO CANC
MRF SWP
F.E HEAD XO CANCEL
DRUM ON
DRIVE+9V
IC801 DRUM MOTOR DRIVE
DMC
DMU
DMV
DMW
M1001 DRUM MOTOR
DRUM MOTOR ASS'Y (2/2)
SE(2/2)
CAPSTAN ERROR
CAPSTAN BIAS
IC804(2/2) CAPSTAN POWER AMP
Q806,880 POWER DRIVE
Q807
CAPSTAN ON CONT
GAIN SW
REG 5V(ANA)
Q908,909 EMERGENCY STOP
CAPSTAN ON
CAPSTAN;L;FWD/RVS
IC802 CAPSTAN MOTOR DRIVE
CMU
CMV
CMW
VHE(+)
VHE(-)
UHE(+)
UHE(-)
WHE(+)
WHE(-)
D803 LEVEL SHIFT
M1002 CAPSTAN MOTOR
HALL DEVICE
MD-23(2/4)
CAPSTAN MOTOR ASS'Y (2/2)

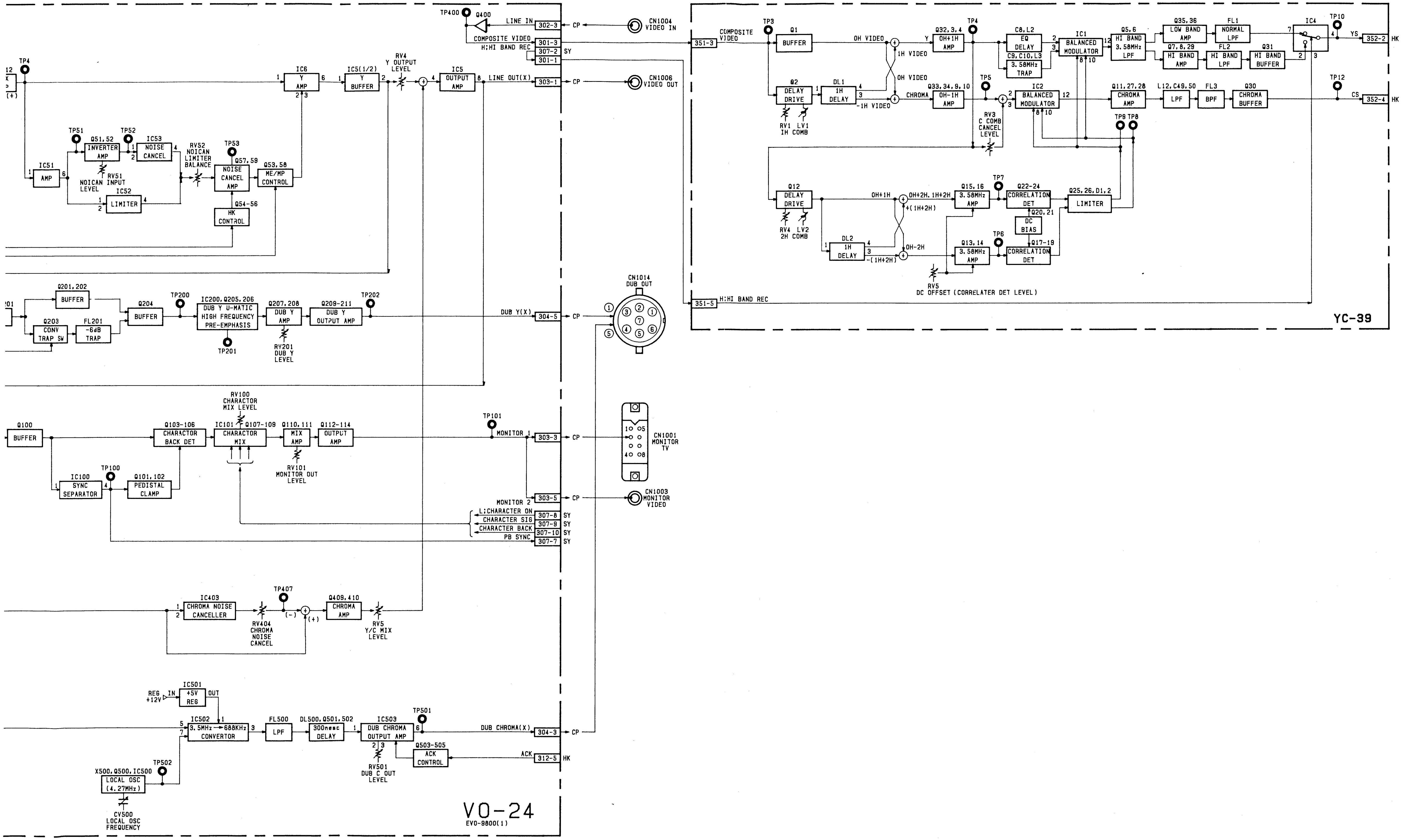
REEL SERVO, SYSTEM CONTROL


IC001
MODE CONTROL
IC007(1/2)
IC007(2/2)
IC008
INITIAL RESET
UNSW +5V
X001
8MHz OSC
IC003
MECHANISM CONTROL 2(ATF)
X001
5MHz OSC
TP002
+5V
IC002
MECHANISM CONTROL 1(MECH)
X002
5MHz OSC
IC004 MECHANISM CONTROL 3(HMS)
4.19MHz OSC
TP001
Q002
Q006
Q014
Q008
Q005
Q015
Q112,113
DOD SWITCH
D010
Q003
Q004
D003
Q008
Q109
Q713
Q011
DIFFER-ENTIAL
Q007,008,D006,011
D→A CONV
SY
DC
MB ← MD
CHECK PIN
DI
HK ← IG
RS
FR
REEL DIR
AUTO
D0-D4
RP PB MODE
DRUM ON
CAP ON CONT
MD(2/4)
TAPE PATH ADJ
IG → HK
IC806
CASECON MOTOR DRIVE
IC302
LOADING MOTOR DRIVE
IC301
CONTROL MOTOR DRIVE
Q301,302
SOLENOID START
Q303,304
SOLENOID HOLD
Q305,PF303
S-REEL FG SENSOR
Q306,PH301
T-REEL 1 FG SENSOR
3STATE
0V FWD
2.5V STOP
5V RVS
IC903
TP901
WAVE SHAPER
F→V CONV
ERROR AMP
Q904,905
FREQUENCY SWITCH
RV901
REEL SPEED
SE-10(2/2)
EVO-9800(1)

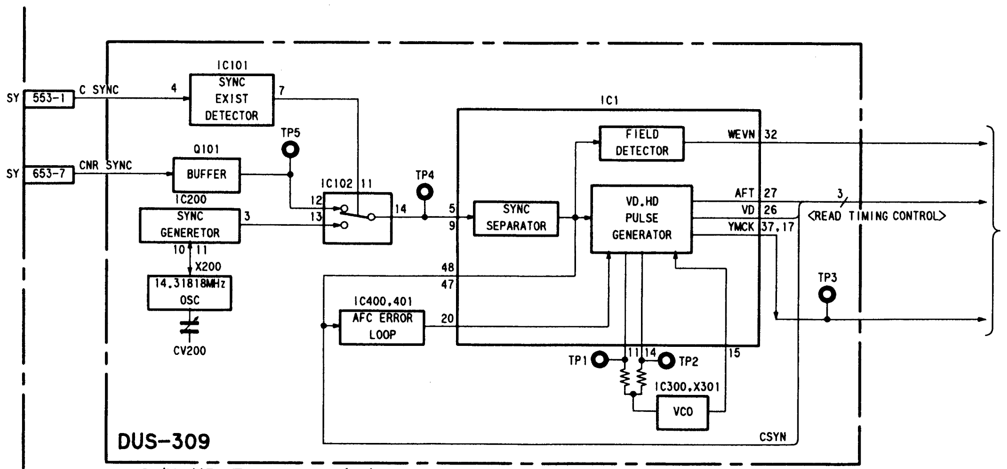

IC003 MECHANISM CONTROL 2(ATF)
IC002 MECHANISM CONTROL 1(MECH)
IC004 MECHANISM CONTROL 3(HMS)
IC007(1/2)
IC007(2/2)
X001 5MHz OSC
X002 5MHz OSC
4.19MHz OSC
TP001
TP002
Q003
Q004
D003
Q008
Q109
Q713
Q011 DIFEER-ENTIAL
Q007,008,D006,011
D→A CONV
DRUM ON
CAP ON CONT
REELBIAS
L:REEL SERVO ON
SE-10(2/2)
EVO-9800(1)
IC806 CASECON MOTOR DRIVE
Q811 DRIVE
Q810 DRIVE
IC805(1/2) TAPE TOP DETECTOR
IC805(2/2) TAPE END DETECTOR
MD-23(3/4)
M1004 CASSETTE COMPARTMENT MOTOR
S103 CASSETTE LOCK
S102 CASSETTE LOADING
Q715 TAPE TOP SENSOR
TS-74
Q715 TAPE END SENSOR
TS-74
D001 TAPE RED
LD-1
IC302 LOADING MOTOR DRIVE
M1006 LOADING MOTOR
LOADING SWITCH
LS-9
IC301 CONTROL MOTOR DRIVE
M1005 CONTROL MOTOR
MODE SWITCH
MS-4
Q301,302 SOLENOID START
Q303,304 SOLENOID HOLD
PM1001 BRAKE SOLENOID
Q305,PF303 S-REEL FG SENSOR
Q306,PH301 T-REEL 1 FG SENSOR
Q307,PH302 T-REEL 2 FG SENSOR
S1010
RS-31
IC901 REEL MOTOR DRIVE
Q903 DRIVE
Q901 DRIVE
Q902 DRIVE
IC903
WAVE SHAPER
TP901
F→V CONV
ERROR AMP
IC902(1/3) REEL ERROR AMP
IC904(1/2)
IC902(2/3) REEL BIAS AMP
IC902(3/3) REEL ERROR AMP
IC904(2/2)
Q812,813 POWER DRIVE
TP902
Q904,905 FREQUENCY SWITCH
RV901 REEL SPEED
Q906
Q907
Q820,821 +5V REG
DRIVE +9V
DRIVE +5V
3STATE 0V 2.5V 5V FWD STOP RVS
MD-23(4/4)
M1003 REEL MOTOR
HALL DEVICE
REEL MOTOR ASSY

VIDEO INTERFACE

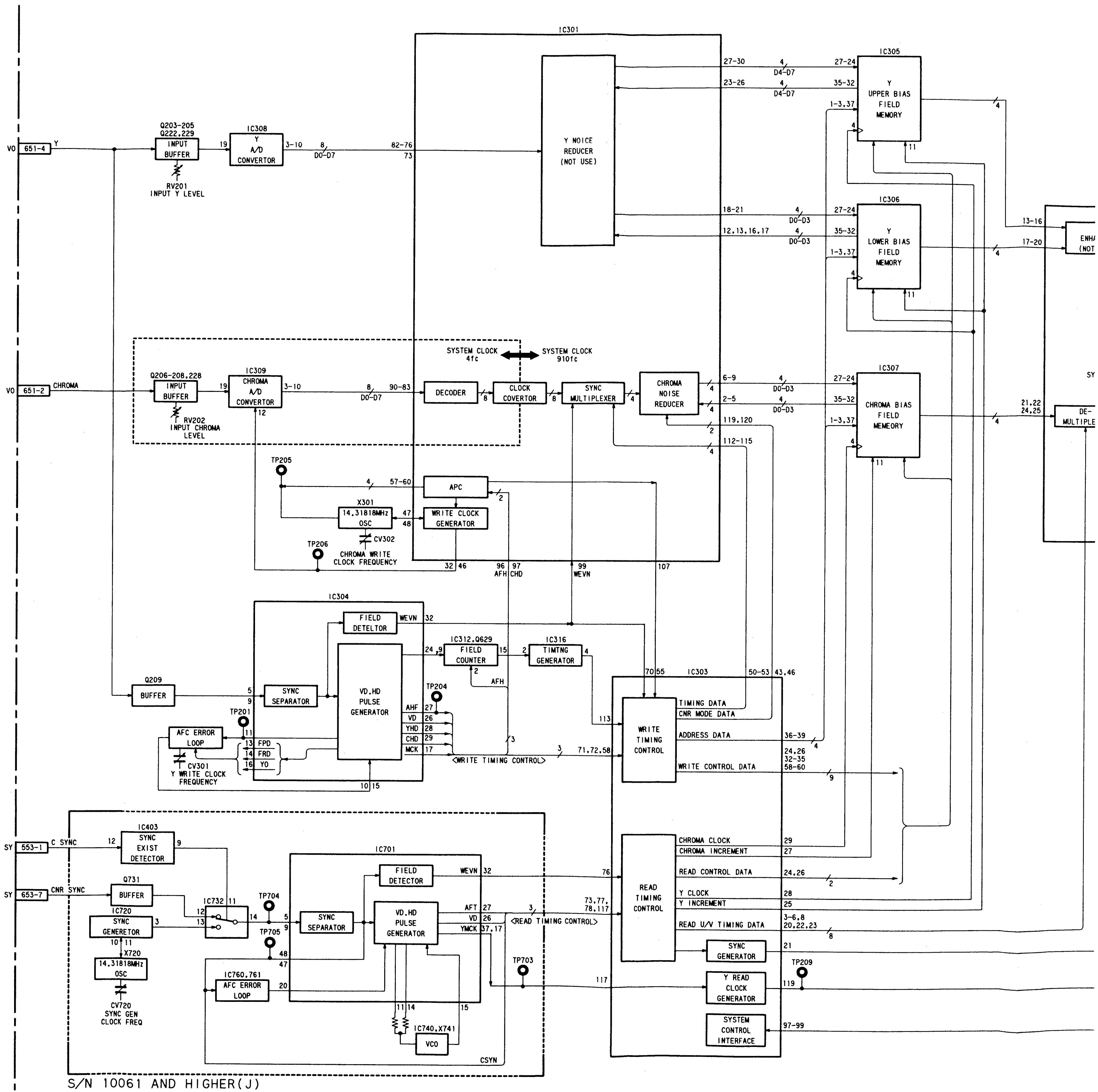

SY 307-1 H:CNR ON
DI 310-1 Y(CNR)
Y(X)
HK 308-7
DI 310-3 Y(CNR)
HK 308-1 L:CNR ON
Q9
IC1
Q10,11 Y EQ
Q1,IC2 Y CARRIER LEAK LIMITER
RV1 LIMITER BALANCE
IC3,Q2 Y AMP
TP1
TP2
IC4,Q4 H CORRELATOR
DL1 280nsec DELAY
TP3
RV2 CARRIER LEAK CANCEL (GAIN)
Q8,12 MIX AMP
TP4
Q5,DL2 140nsec DELAY
Q6,7 Y DELAY
RV3 CARRIER LEAK CANCEL (PHASE)
IC6 Y AMP
IC5(1/2) Y BUFFER
RV4 Y OUTPUT LEVEL
IC5 OUTPUT AMP
LINE OUT(X)
303-1 CP
CN1006 VIDEO OUT
TP400 Q400
LINE IN 302-3 CP
CN1004 VIDEO IN
COMPOSITE VIDEO 301-3
H:HI BAND REC 307-2 SY
301-1
IC51 AMP
TP51 Q51,52 INVERTER AMP
RV51 NOICAN INPUT LEVEL
TP52 IC53 NOISE CANCEL
IC52 LIMITER
RV52 NOICAN LIMITER BALANCE
TP53 Q57,59 NOISE CANCEL AMP
Q53,58 ME/MP CONTROL
Q54-56 HK CONTROL
HK 308-5 HK
HK 308-3 L:ME/H:MP
Q200,DL201 DUB Y DELAY
Q201,202 BUFFER
Q203 CONV TRAP SW
FL201 -6dB TRAP
Q204 BUFFER
TP200
IC200,Q205,206 DUB Y U-MATIC HIGH FREQUENCY PRE-EMPHASIS
TP201
Q207,208 DUB Y AMP
RV201 DUB Y LEVEL
Q209-211 DUB Y OUTPUT AMP
TP202
DUB Y(X) 304-5 CP
CN1014 DUB OUT
DUB OUT SELECT
SP HIGH LOW
804-3
SW-347
306-1 H:924KHz
Q509 H:LOW BAND
Q100 BUFFER
Q103-106 CHARACTOR BACK DET
RV100 CHARACTOR MIX LEVEL
IC101 Q107-109 CHARACTOR MIX
Q110,111 MIX AMP
Q112-114 OUTPUT AMP
RV101 MONITOR OUT LEVEL
TP101 MONITOR 1 303-3 CP
CN1001 MONITOR TV
IC100 SYNC SEPARATOR
TP100
Q101,102 PEDISTAL CLAMP
MONITOR 2 303-5 CP
CN1003 MONITOR VIDEO
L:CHARACTER ON 307-8 SY
CHARACTER SIG 307-9 SY
CHARACTER BACK 307-10 SY
PB SYNC 307-7 SY
DI 311-3 CHROMA(CNR)
HK 312-1 PB CHROMA
Q506 BUFFER
DI 311-1 CHROMA OUT(X)
IC504
Q411,414 PHASE EQ (DELAY)
Q412 BUFFER
TP409
IC403 CHROMA NOISE CANCELLER
RV404 CHROMA NOISE CANCEL
TP407
Q409,410 CHROMA AMP
RV5 Y/C MIX LEVEL
CN1005 SYNC IN CP
302-1 REF SYNC
Q401 TP401
SY 307-12 REF SYNC
REG +12V IN
IC501 +5V REG OUT
IC502 3.5MHz→688KHz CONVERTOR
FL500 LPF
DL500,Q501,502 300nsec DELAY
IC503 DUB CHROMA OUTPUT AMP
TP501
DUB CHROMA(X) 304-3 CP
RV501 DUB C OUT LEVEL
Q503-505 ACK CONTROL
ACK 312-5 HK
X500,Q500,IC500 LOCAL OSC (4.27MHz)
TP502
CV500 LOCAL OSC FREQUENCY
VO-24
EVO-9800(1)
COMPOSITE VIDEO 351-3
TP3 Q1 BUFFER
Q2 DELAY DRIVE
DL1 1H DELAY
RV1 LV1 1H COMB
Q12 DELAY DRIVE
RV4 LV2 2H COMB
DL2 1H DELAY
351-5 H:HI BAND REC


TP400
Q400
LINE IN
302-3
CP
CN1004
VIDEO IN
COMPOSITE VIDEO
301-3
H:HI BAND REC
307-2
SY
301-1
TP4
IC6
Y AMP
IC5(1/2)
Y BUFFER
RV4
Y OUTPUT LEVEL
IC5
OUTPUT AMP
LINE OUT(X)
303-1
CN1006
VIDEO OUT
TP51
TP52
Q51,52
INVERTER AMP
IC53
NOISE CANCEL
RV52
NOICAN LIMITER BALANCE
TP53
Q57,59
NOISE CANCEL AMP
Q53,58
ME/MP CONTROL
IC51
AMP
RV51
NOICAN INPUT LEVEL
IC52
LIMITER
Q54-56
HK CONTROL
Q201,202
BUFFER
Q203
CONV TRAP SW
FL201
-6dB TRAP
Q204
BUFFER
TP200
IC200,Q205,206
DUB Y U-MATIC HIGH FREQUENCY PRE-EMPHASIS
TP201
Q207,208
DUB Y AMP
RV201
DUB Y LEVEL
Q209-211
DUB Y OUTPUT AMP
TP202
DUB Y(X)
304-5
CN1014
DUB OUT
Q100
BUFFER
Q103-106
CHARACTOR BACK DET
RV100
CHARACTOR MIX LEVEL
IC101 Q107-109
CHARACTOR MIX
Q110,111
MIX AMP
RV101
MONITOR OUT LEVEL
Q112-114
OUTPUT AMP
TP101
MONITOR
303-3
CN1001
MONITOR TV
IC100
SYNC SEPARATOR
TP100
Q101,102
PEDISTAL CLAMP
MONITOR 2
303-5
CN1003
MONITOR VIDEO
L:CHARACTER ON
307-8
CHARACTER SIG
307-9
CHARACTER BACK
307-10
PB SYNC
307-7
IC403
CHROMA NOISE CANCELLER
RV404
CHROMA NOISE CANCEL
TP407
Q409,410
CHROMA AMP
RV5
Y/C MIX LEVEL
IC501
REG
+12V
IN
+5V REG
OUT
IC502
3.5MHz→688KHz CONVERTOR
FL500
LPF
DL500,Q501,502
300nsec DELAY
IC503
DUB CHROMA OUTPUT AMP
RV501
DUB C OUT LEVEL
TP501
DUB CHROMA(X)
304-3
Q503-505
ACK CONTROL
ACK
312-5
HK
X500,Q500,IC500
LOCAL OSC (4.27MHz)
TP502
CV500
LOCAL OSC FREQUENCY
VO-24
EVO-9800(1)
351-3
COMPOSITE VIDEO
TP3
Q1
BUFFER
0H VIDEO
Y
Q32,3,4
0H+1H AMP
TP4
C8,L2
EQ DELAY
C9,C10,L3
3.58MHz TRAP
IC1
BALANCED MODULATOR
Q5,6
HI BAND 3.58MHz LPF
Q35,36
LOW BAND AMP
FL1
NORMAL LPF
Q7,8,29
HI BAND AMP
FL2
HI BAND LPF
Q31
HI BAND BUFFER
IC4
TP10
YS
352-2
HK
1H VIDEO
0H VIDEO
Q2
DELAY DRIVE
DL1
1H DELAY
-1H VIDEO
CHROMA
Q33,34,9,10
0H-1H AMP
TP5
IC2
BALANCED MODULATOR
Q11,27,28
CHROMA AMP
L12,C49,50
LPF
FL3
BPF
Q30
CHROMA BUFFER
TP12
CS
352-4
RV1 LV1
1H COMB
RV3
C COMB CANCEL LEVEL
TP9 TP8
Q12
DELAY DRIVE
0H+1H
0H+2H,1H+2H
+(1H+2H)
Q15,16
3.58MHz AMP
TP7
Q22-24
CORRELATION DET
Q20,21
DC BIAS
Q25,26,D1,2
LIMITER
RV4 LV2
2H COMB
DL2
1H DELAY
0H-2H
-(1H+2H)
Q13,14
3.58MHz AMP
TP6
Q17-19
CORRELATION DET
RV5
DC OFFSET (CORRELATER DET LEVEL)
351-5
H:HI BAND REC
YC-39

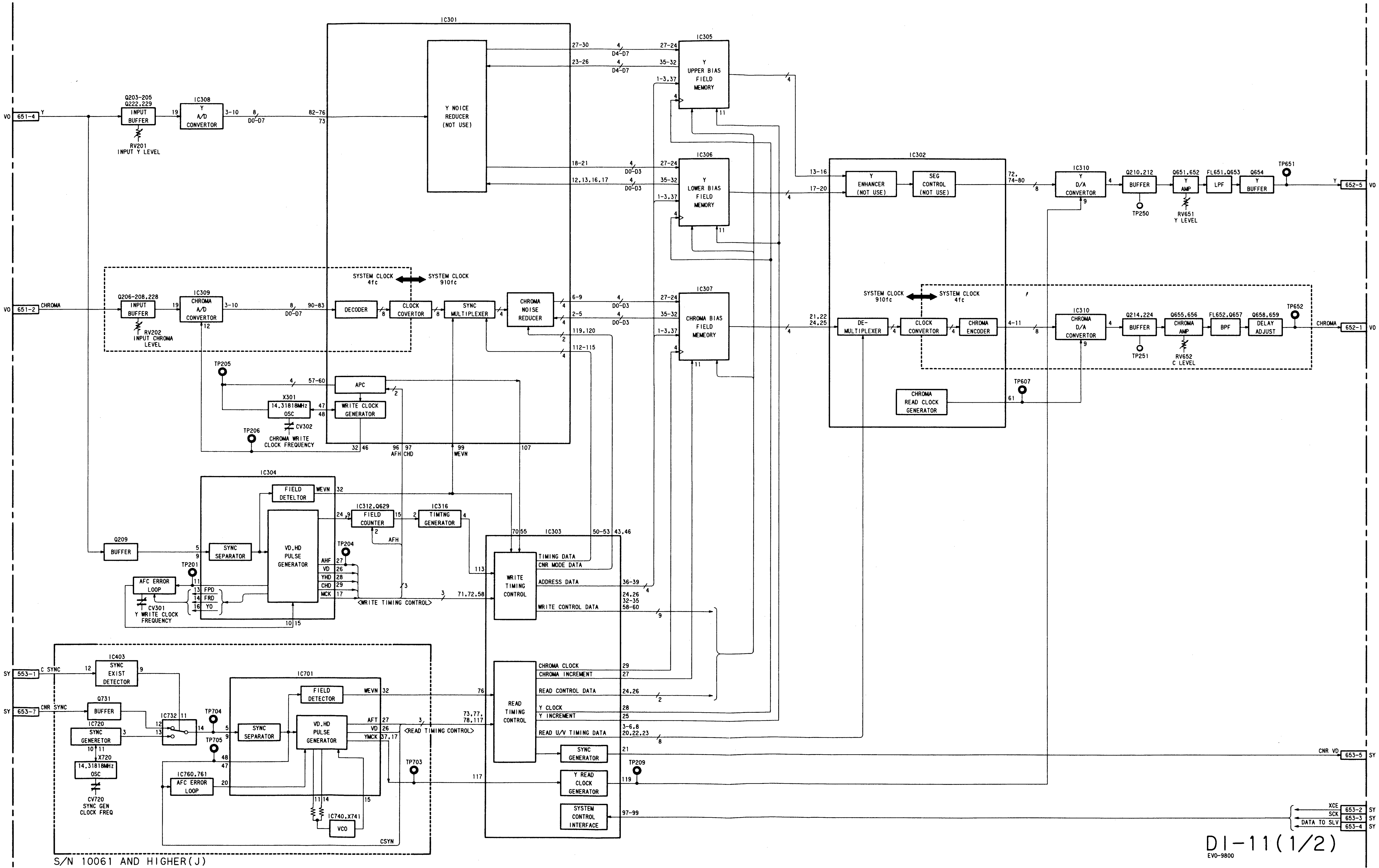
DIGITAL CNR


SY 553-1 C SYNC
SY 653-7 CNR SYNC
IC101 SYNC EXIST DETECTOR
Q101 BUFFER
IC200 SYNC GENERETOR
X200 14.31818MHz OSC
CV200
TP5
IC102
TP4
IC1
SYNC SEPARATOR
FIELD DETECTOR
VD,HD PULSE GENERATOR
WEVN 32
AFT 27
VD 26
YMCK 37,17
<READ TIMING CONTROL>
IC400,401 AFC ERROR LOOP
TP1
TP2
TP3
IC300,X301
VCO
CSYN
DUS-309

S/N UP TO 10060(J)
S/N UP TO 10340(UC)

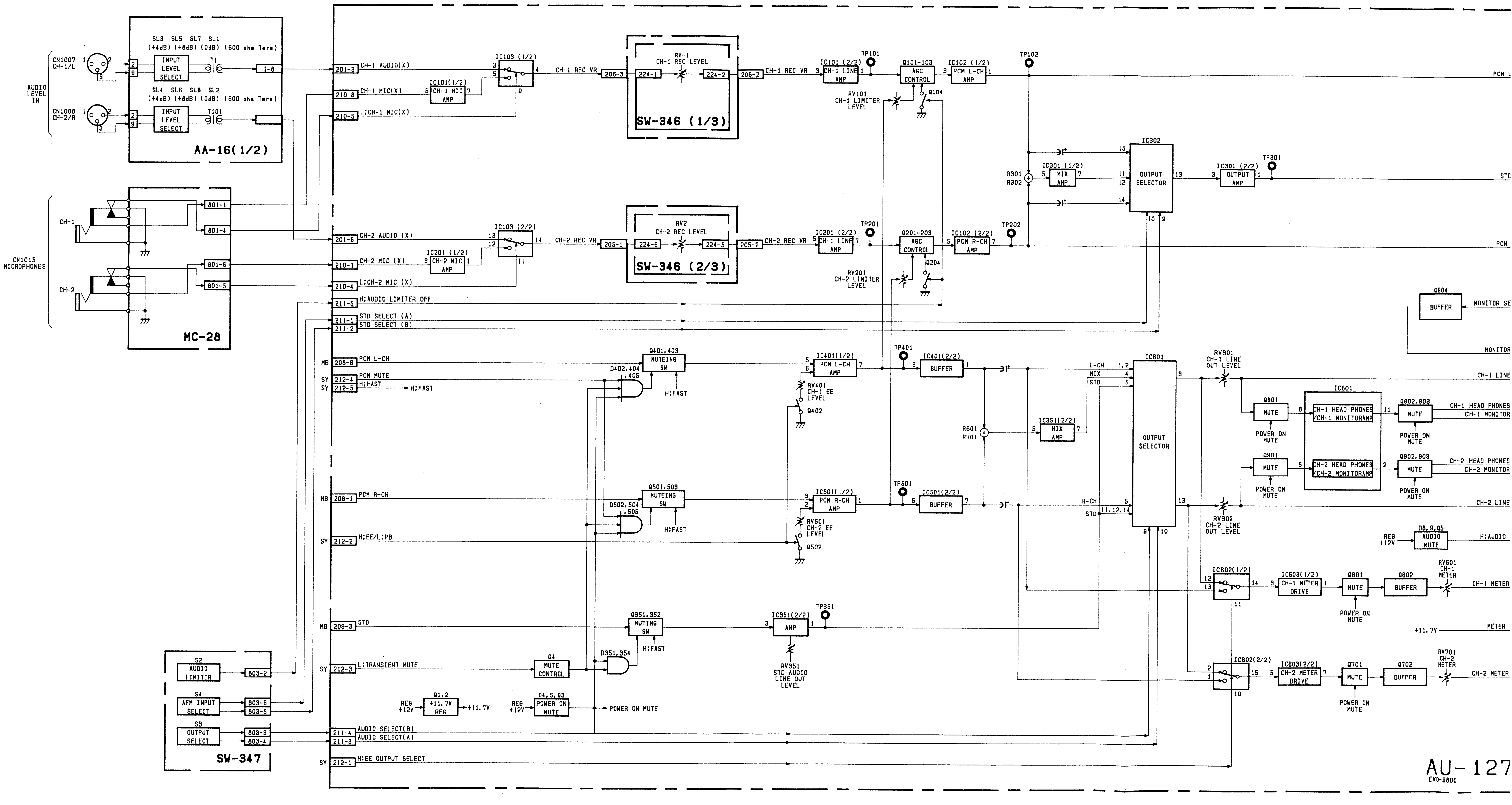

VO 651-4 Y
VO 651-2 CHROMA
Q203-205 Q222,229 INPUT BUFFER
RV201 INPUT Y LEVEL
IC308 Y A/D CONVERTOR
D0-D7
IC301
Y NOICE REDUCER (NOT USE)
Q206-208,228 INPUT BUFFER
RV202 INPUT CHROMA LEVEL
IC309 CHROMA A/D CONVERTOR
SYSTEM CLOCK 4fc
SYSTEM CLOCK 910fc
DECODER
CLOCK COVERTOR
SYNC MULTIPLEXER
CHROMA NOISE REDUCER
TP205
APC
X301 14.31818MHz OSC
WRITE CLOCK GENERATOR
CV302
TP206
CHROMA WRITE CLOCK FREQUENCY
AFH CHD
WEVN
IC305 Y UPPER BIAS FIELD MEMORY
IC306 Y LOWER BIAS FIELD MEMORY
IC307 CHROMA BIAS FIELD MEMORY
D4-D7
D0-D3
ENH (NOT
DE- MULTIPLE
IC304
FIELD DETELTOR
IC312,Q629 FIELD COUNTER
IC316 TIMING GENERATOR
Q209 BUFFER
SYNC SEPARATOR
VD,HD PULSE GENERATOR
TP204
TP201
AFC ERROR LOOP
CV301 Y WRITE CLOCK FREQUENCY
AHF VD YHD CHD MCK
FPD FRD YO
<WRITE TIMING CONTROL>
IC303
WRITE TIMING CONTROL
TIMING DATA
CNR MODE DATA
ADDRESS DATA
WRITE CONTROL DATA
READ TIMING CONTROL
CHROMA CLOCK
CHROMA INCREMENT
READ CONTROL DATA
Y CLOCK
Y INCREMENT
READ U/V TIMING DATA
SYNC GENERATOR
Y READ CLOCK GENERATOR
SYSTEM CONTROL INTERFACE
TP209
SY 553-1 C SYNC
SY 653-7 CNR SYNC
IC403 SYNC EXIST DETECTOR
Q731 BUFFER
IC720 SYNC GENERETOR
X720 14.31818MHz OSC
CV720 SYNC GEN CLOCK FREQ
IC732
TP704
TP705
IC701
SYNC SEPARATOR
FIELD DETECTOR
VD,HD PULSE GENERATOR
<READ TIMING CONTROL>
IC760,761 AFC ERROR LOOP
IC740,X741
VCO
TP703
CSYN

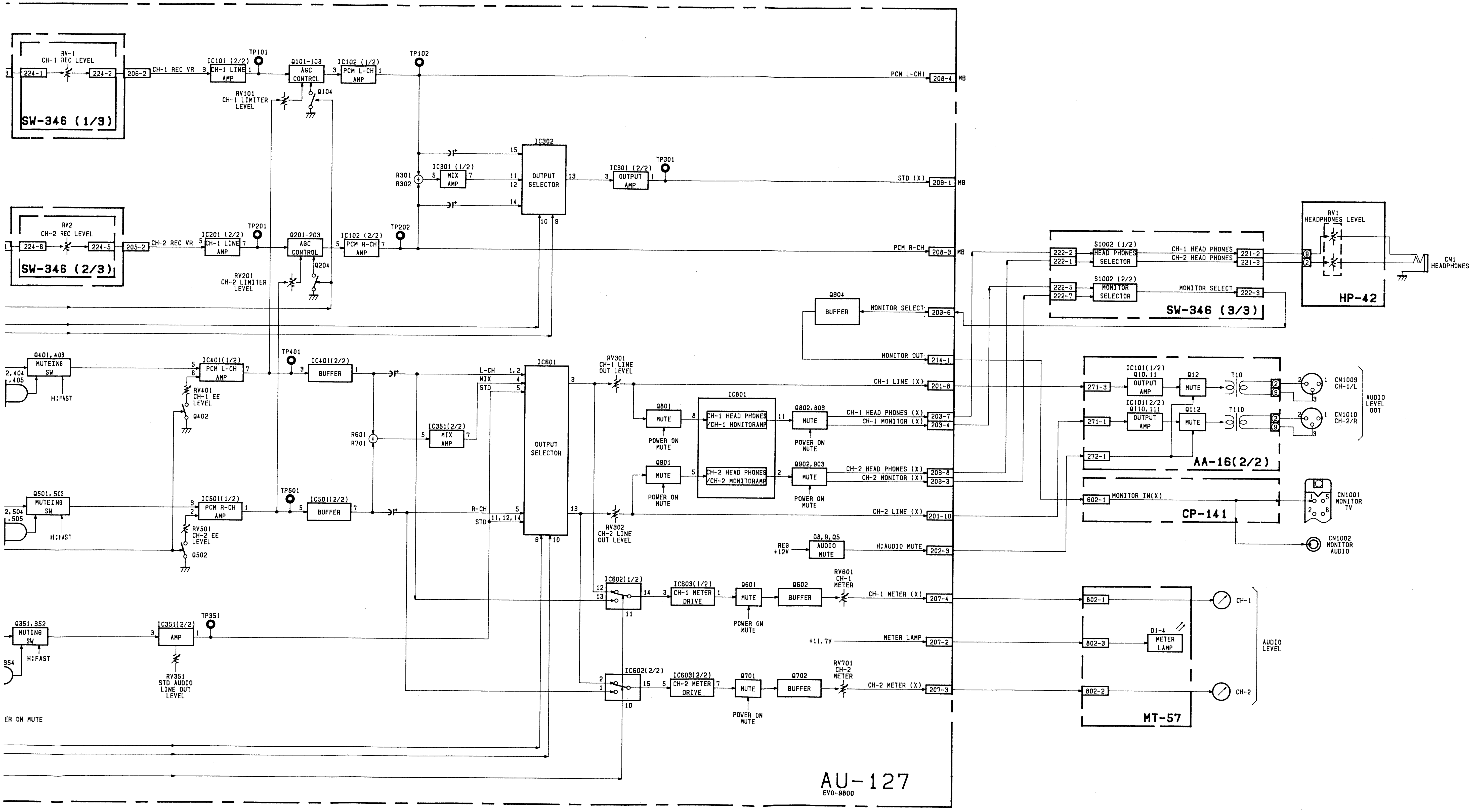
S/N 10061 AND HIGHER(J)
S/N 10341 AND HIGHER(UC)


IC301
Y NOICE REDUCER (NOT USE)
IC305
Y UPPER BIAS FIELD MEMORY
IC306
Y LOWER BIAS FIELD MEMORY
IC307
CHROMA BIAS FIELD MEMEORY
IC302
Y ENHANCER (NOT USE)
SEG CONTROL (NOT USE)
DE-MULTIPLEXER
CLOCK CONVERTOR
CHROMA ENCODER
SYSTEM CLOCK 910fc
SYSTEM CLOCK 4fc
CHROMA READ CLOCK GENERATOR
TP607
IC310
Y D/A CONVERTOR
CHROMA D/A CONVERTOR
Q210,212
BUFFER
TP250
Q651,652
Y AMP
RV651 Y LEVEL
FL651,Q653
LPF
Q654
Y BUFFER
TP651
652-5 VO
Q214,224
BUFFER
TP251
Q655,656
CHROMA AMP
RV652 C LEVEL
FL652,Q657
BPF
Q658,659
DELAY ADJUST
TP652
CHROMA
652-1 VO
VO 651-4 Y
Q203-205 Q222,229
INPUT BUFFER
RV201 INPUT Y LEVEL
IC308
Y A/D CONVERTOR
D0-D7
VO 651-2 CHROMA
Q206-208,228
INPUT BUFFER
RV202 INPUT CHROMA LEVEL
IC309
CHROMA A/D CONVERTOR
SYSTEM CLOCK 4fc
SYSTEM CLOCK 910fc
DECODER
CLOCK COVERTOR
SYNC MULTIPLEXER
CHROMA NOISE REDUCER
TP205
APC
X301
14.31818MHz OSC
CV302
WRITE CLOCK GENERATOR
TP206
CHROMA WRITE CLOCK FREQUENCY
AFH CHD
WEVN
IC304
FIELD DETELTOR
WEVN
IC312,Q629
FIELD COUNTER
IC316
TIMTNG GENERATOR
AFH
Q209
BUFFER
SYNC SEPARATOR
VD,HD PULSE GENERATOR
TP204
AHF VD YHD CHD MCK
TP201
AFC ERROR LOOP
FPD FRD YO
CV301
Y WRITE CLOCK FREQUENCY
<WRITE TIMING CONTROL>
IC303
WRITE TIMING CONTROL
TIMING DATA
CNR MODE DATA
ADDRESS DATA
WRITE CONTROL DATA
READ TIMING CONTROL
CHROMA CLOCK
CHROMA INCREMENT
READ CONTROL DATA
Y CLOCK
Y INCREMENT
READ U/V TIMING DATA
SYNC GENERATOR
Y READ CLOCK GENERATOR
SYSTEM CONTROL INTERFACE
TP209
CNR VD
653-5 SY
XCE 653-2 SY
SCK 653-3 SY
DATA TO SLV 653-4 SY
SY 553-1 C SYNC
IC403
SYNC EXIST DETECTOR
SY 653-7 CNR SYNC
Q731
BUFFER
IC720
SYNC GENERETOR
X720
14.31818MHz OSC
CV720
SYNC GEN CLOCK FREQ
IC732
TP704
TP705
IC701
SYNC SEPARATOR
FIELD DETECTOR
WEVN
VD,HD PULSE GENERATOR
AFT VD YMCK
<READ TIMING CONTROL>
IC760,761
AFC ERROR LOOP
IC740,X741
VCO
TP703
CSYN

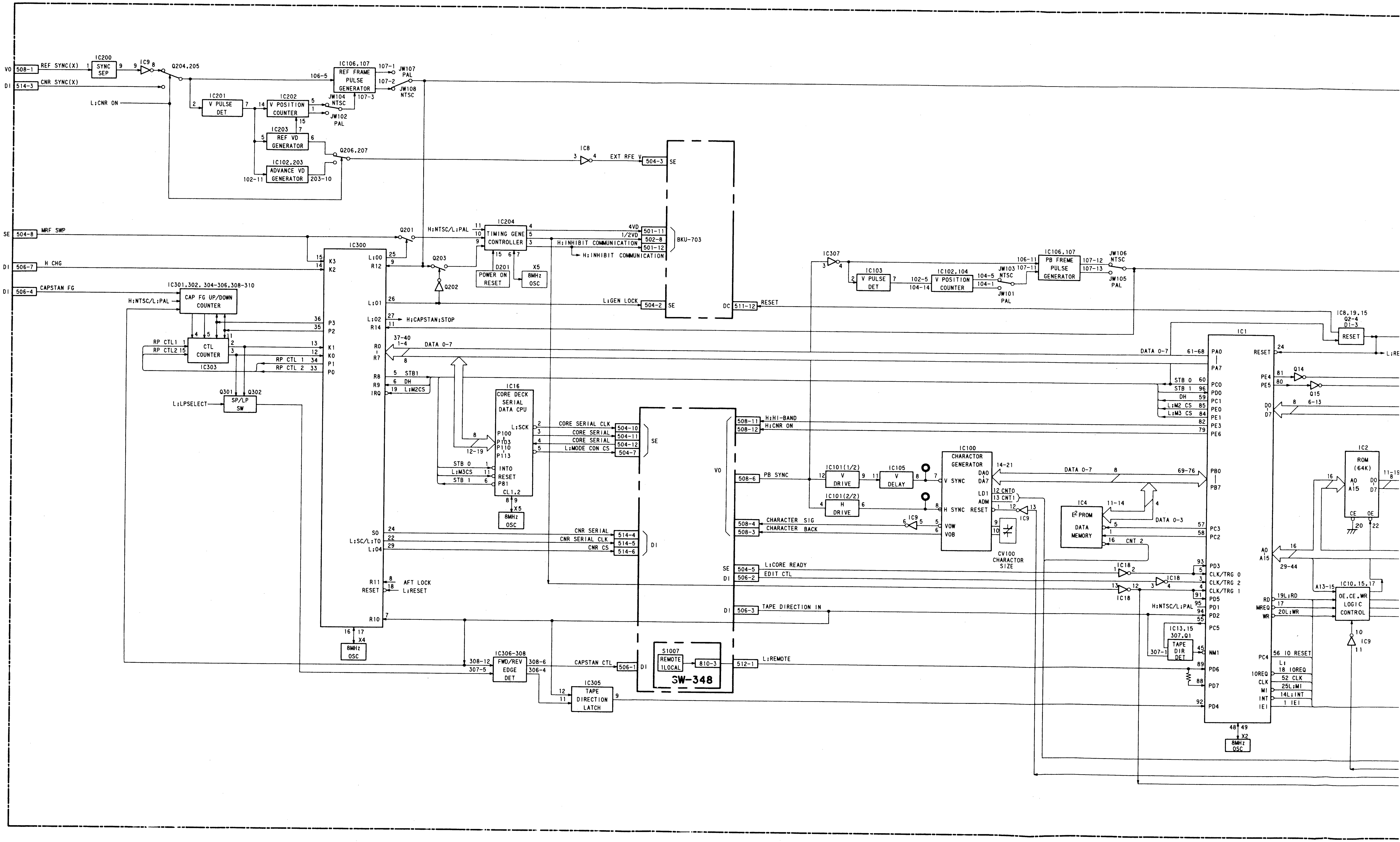
S/N 10061 AND HIGHER(J)
S/N 10341 AND HIGHER(UC)

DI-11(1/2)
EVO-9800


AUDIO LEVEL IN
CN1007 CH-1/L
CN1008 CH-2/R
SL3 SL5 SL7 SL1
(+4dB) (+8dB) (0dB) (600 ohm Term)
SL4 SL6 SL8 SL2
INPUT LEVEL SELECT
T1
T101
1-8
AA-16(1/2)
CN1015 MICROPHONES
CH-1
CH-2
801-1
801-4
801-6
801-5
MC-28
201-3 CH-1 AUDIO(X)
210-8 CH-1 MIC(X)
210-5 L;CH-1 MIC(X)
201-6 CH-2 AUDIO (X)
210-1 CH-2 MIC (X)
210-4 L;CH-2 MIC (X)
211-5 H;AUDIO LIMITER OFF
211-1 STD SELECT (A)
211-2 STD SELECT (B)
MB 208-6 PCM L-CH
SY 212-4 PCM MUTE
SY 212-5 H;FAST
H;FAST
MB 208-1 PCM R-CH
SY 212-2 H;EE/L;PB
MB 209-3 STD
SY 212-3 L;TRANSIENT MUTE
211-4 AUDIO SELECT(B)
211-3 AUDIO SELECT(A)
SY 212-1 H;EE OUTPUT SELECT
IC103 (1/2)
IC101(1/2) CH-1 MIC AMP
IC103 (2/2)
IC201 (1/2) CH-2 MIC AMP
CH-1 REC VR
CH-2 REC VR
206-3
224-1
224-2
206-2
RV-1 CH-1 REC LEVEL
SW-346 (1/3)
205-1
224-6
224-5
205-2
RV2 CH-2 REC LEVEL
SW-346 (2/3)
TP101
IC101 (2/2) CH-1 LINE AMP
Q101-103 AGC CONTROL
Q104
RV101 CH-1 LIMITER LEVEL
IC102 (1/2) PCM L-CH AMP
TP102
TP201
IC201 (2/2) CH-1 LINE AMP
Q201-203 AGC CONTROL
Q204
RV201 CH-2 LIMITER LEVEL
IC102 (2/2) PCM R-CH AMP
TP202
R301
R302
IC301 (1/2) MIX AMP
IC302 OUTPUT SELECTOR
IC301 (2/2) OUTPUT AMP
TP301
PCM L
STD
PCM
Q804 BUFFER
MONITOR SE
MONITOR
Q401,403 MUTEING SW
D402,404,405
Q501,503 MUTEING SW
D502,504,505
H;FAST
IC401(1/2) PCM L-CH AMP
RV401 CH-1 EE LEVEL
Q402
TP401
IC401(2/2) BUFFER
IC501(1/2) PCM R-CH AMP
RV501 CH-2 EE LEVEL
Q502
TP501
IC501(2/2) BUFFER
R601
R701
IC351(2/2) MIX AMP
IC601 OUTPUT SELECTOR
L-CH
MIX
STD
R-CH
STD
RV301 CH-1 LINE OUT LEVEL
RV302 CH-2 LINE OUT LEVEL
CH-1 LINE
CH-2 LINE
IC801
Q801 MUTE
Q901 MUTE
POWER ON MUTE
CH-1 HEAD PHONES /CH-1 MONITORAMP
CH-2 HEAD PHONES /CH-2 MONITORAMP
Q802,803 MUTE
Q902,803 MUTE
CH-1 HEAD PHONES
CH-1 MONITOR
CH-2 HEAD PHONES
CH-2 MONITOR
REG +12V
D8,9,Q5 AUDIO MUTE
H;AUDIO
IC602(1/2)
IC603(1/2) CH-1 METER DRIVE
Q601 MUTE
Q602 BUFFER
RV601 CH-1 METER
CH-1 METER
+11.7V
METER
IC602(2/2)
IC603(2/2) CH-2 METER DRIVE
Q701 MUTE
Q702 BUFFER
RV701 CH-2 METER
CH-2 METER
Q351,352 MUTING SW
D351,354
IC351(2/2) AMP
TP351
RV351 STD AUDIO LINE OUT LEVEL
Q4 MUTE CONTROL
REG +12V
Q1,2 +11.7V REG
+11.7V
D4,5,Q3 POWER ON MUTE
POWER ON MUTE
S2 AUDIO LIMITER
803-2
S4 AFM INPUT SELECT
803-6
803-5
S3 OUTPUT SELECT
803-3
803-4
SW-347
AU-127
EVO-9800


RV-1
CH-1 REC LEVEL
224-1
224-2
SW-346 (1/3)
206-2
CH-1 REC VR
IC101 (2/2)
CH-1 LINE AMP
TP101
Q101-103
AGC CONTROL
Q104
RV101
CH-1 LIMITER LEVEL
IC102 (1/2)
PCM L-CH AMP
TP102
PCM L-CH1
208-4
MB
IC302
OUTPUT SELECTOR
R301
R302
IC301 (1/2)
MIX AMP
IC301 (2/2)
OUTPUT AMP
TP301
STD (X)
209-1
MB
RV2
CH-2 REC LEVEL
224-6
224-5
SW-346 (2/3)
205-2
CH-2 REC VR
IC201 (2/2)
CH-1 LINE AMP
TP201
Q201-203
AGC CONTROL
Q204
RV201
CH-2 LIMITER LEVEL
IC102 (2/2)
PCM R-CH AMP
TP202
PCM R-CH
208-3
MB
Q804
BUFFER
MONITOR SELECT
203-6
MONITOR OUT
214-1
Q401, 403
MUTEING SW
2,404
,405
H;FAST
IC401(1/2)
PCM L-CH AMP
RV401
CH-1 EE LEVEL
Q402
TP401
IC401(2/2)
BUFFER
L-CH
MIX
STD
IC601
OUTPUT SELECTOR
R601
R701
IC351(2/2)
MIX AMP
RV301
CH-1 LINE OUT LEVEL
CH-1 LINE (X)
201-8
IC801
Q801
MUTE
POWER ON MUTE
CH-1 HEAD PHONES /CH-1 MONITORAMP
Q802, 803
MUTE
POWER ON MUTE
CH-1 HEAD PHONES (X)
CH-1 MONITOR (X)
203-7
203-4
Q901
MUTE
POWER ON MUTE
CH-2 HEAD PHONES /CH-2 MONITORAMP
Q902, 903
MUTE
POWER ON MUTE
CH-2 HEAD PHONES (X)
CH-2 MONITOR (X)
203-8
203-3
Q501, 503
MUTEING SW
2,504
,505
H;FAST
IC501(1/2)
PCM R-CH AMP
RV501
CH-2 EE LEVEL
Q502
TP501
IC501(2/2)
BUFFER
R-CH
STD
RV302
CH-2 LINE OUT LEVEL
CH-2 LINE (X)
201-10
REG +12V
D8, 9, Q5
AUDIO MUTE
H;AUDIO MUTE
202-3
IC602(1/2)
IC603(1/2)
CH-1 METER DRIVE
Q601
MUTE
POWER ON MUTE
Q602
BUFFER
RV601
CH-1 METER
CH-1 METER (X)
207-4
+11.7V
METER LAMP
207-2
IC602(2/2)
IC603(2/2)
CH-2 METER DRIVE
Q701
MUTE
POWER ON MUTE
Q702
BUFFER
RV701
CH-2 METER
CH-2 METER (X)
207-3
Q351, 352
MUTING SW
354
H;FAST
IC351(2/2)
AMP
TP351
RV351
STD AUDIO LINE OUT LEVEL
ER ON MUTE
AU-127
EVO-9800
S1002 (1/2)
222-2
222-1
HEAD PHONES SELECTOR
CH-1 HEAD PHONES
CH-2 HEAD PHONES
221-2
221-3
S1002 (2/2)
222-5
222-7
MONITOR SELECTOR
MONITOR SELECT
222-3
SW-346 (3/3)
RV1
HEADPHONES LEVEL
CN1
HEADPHONES
HP-42
IC101(1/2)
Q10, 11
OUTPUT AMP
Q12
MUTE
T10
271-3
CN1009
CH-1/L
IC101(2/2)
Q110, 111
OUTPUT AMP
Q112
MUTE
T110
271-1
CN1010
CH-2/R
AUDIO LEVEL OUT
272-1
AA-16(2/2)
602-1
MONITOR IN(X)
CP-141
CN1001
MONITOR TV
CN1002
MONITOR AUDIO
802-1
CH-1
802-3
D1-4
METER LAMP
802-2
CH-2
MT-57
AUDIO LEVEL

SYSTEM CONTROL


VO 508-1 REF SYNC(X)
DI 514-3 CNR SYNC(X)
L:CNR ON
IC200 SYNC SEP
IC9
Q204,205
IC201 V PULSE DET
IC202 V POSITION COUNTER
IC203 REF VD GENERATOR
IC102,203 ADVANCE VD GENERATOR
102-11
203-10
IC106,107 REF FRAME PULSE GENERATOR
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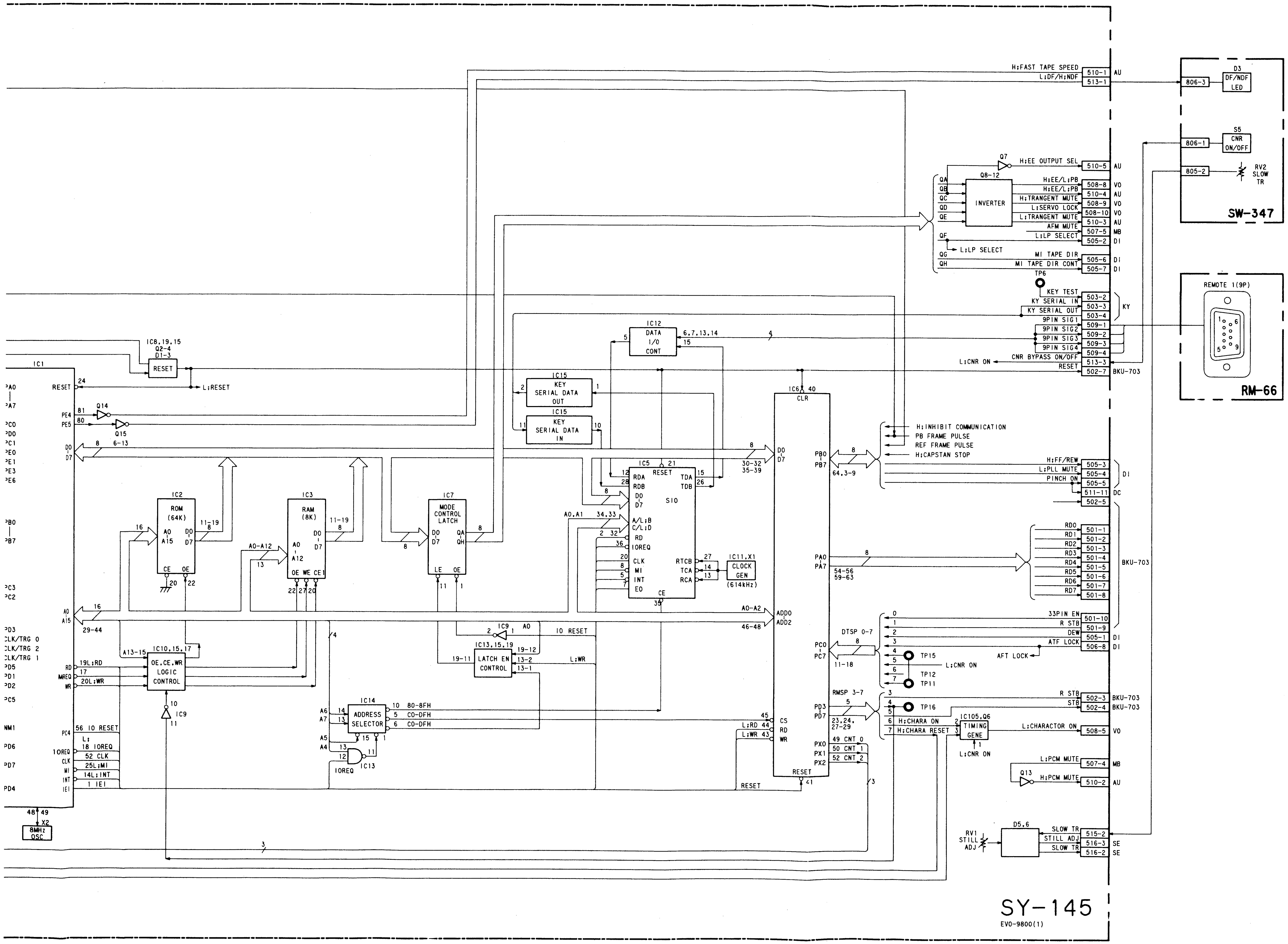
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PA7
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PC1
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PE3
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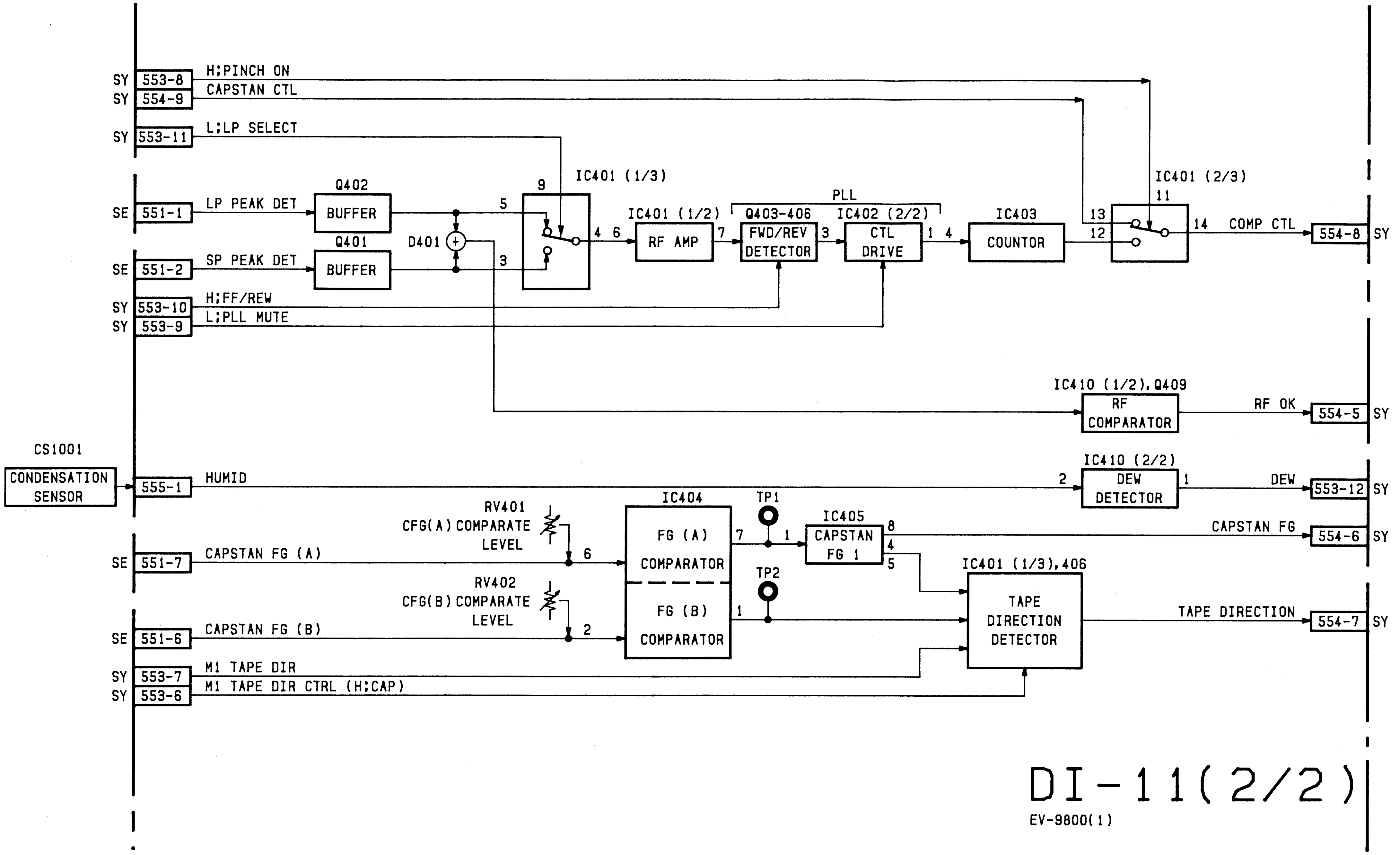
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SY 554-9 CAPSTAN CTL
SY 553-11 L;LP SELECT
SE 551-1 LP PEAK DET
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SY 553-6 M1 TAPE DIR CTRL (H;CAP)
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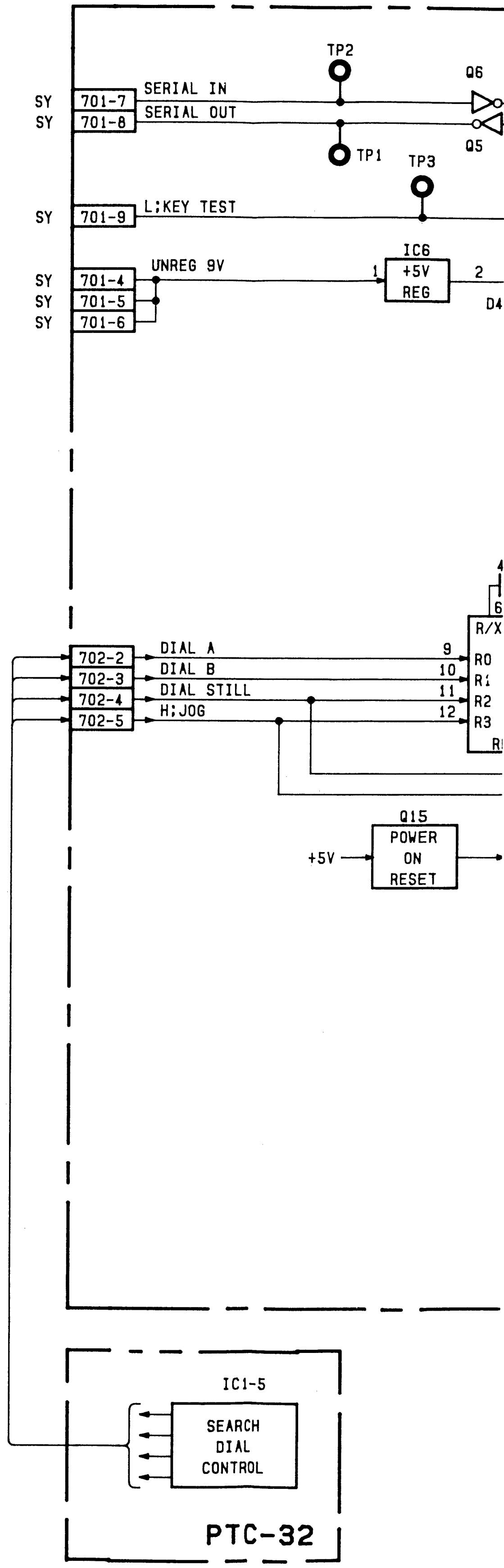
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R3
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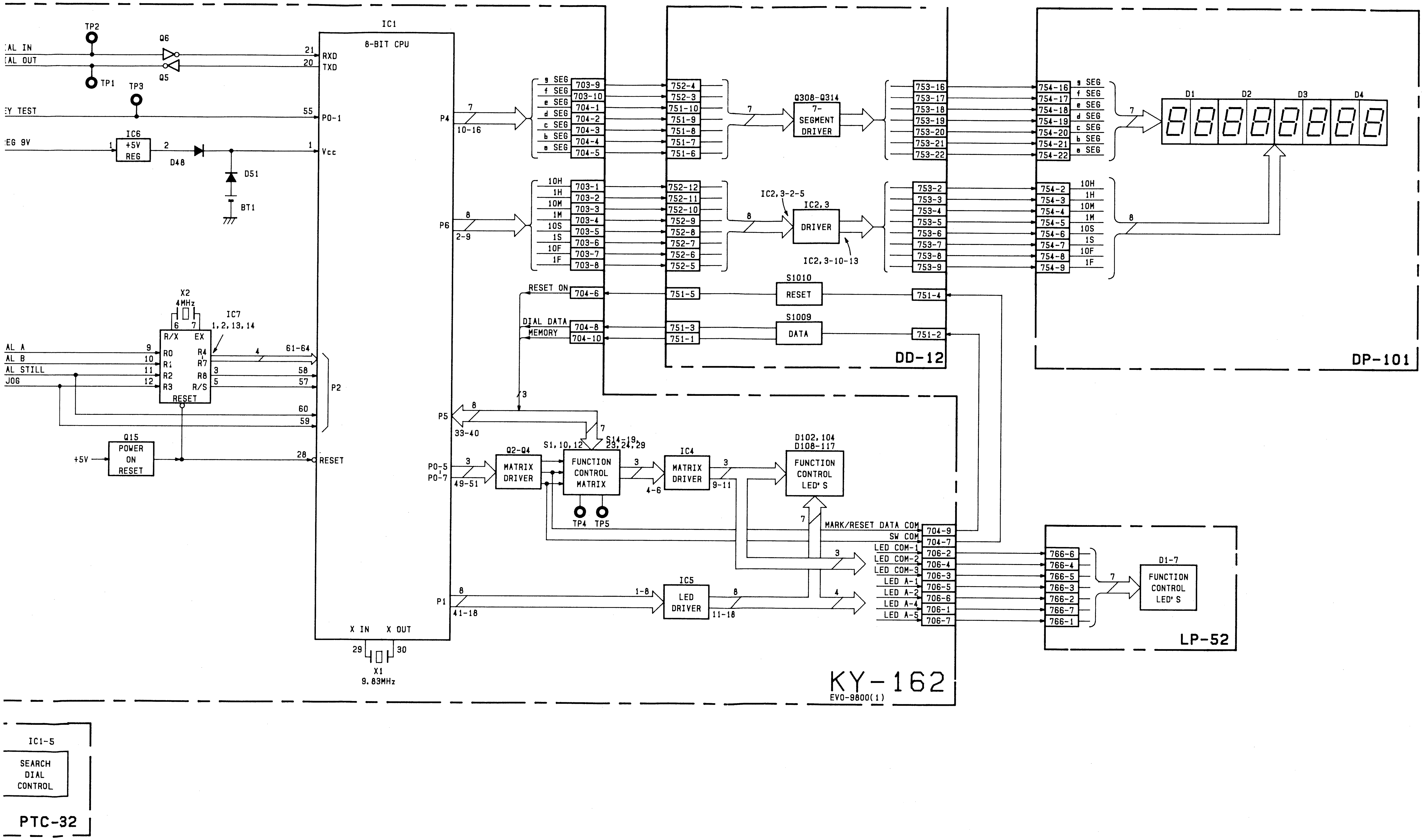
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R3
R4
R7
R8
R/S
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AL STILL
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+5V
g SEG
f SEG
e SEG
d SEG
c SEG
b SEG
a SEG
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SECTION 12
SEMICONDUCTOR ELECTRODES

ここに記載されている IC, トランジスタ, ダイオードは, それぞれの機能を等価的に表わしたものです。したがって互換性を表わすものではありません。(互換性のない型名が併記されている事もあります。)部品の交換をする時は, SPARE PARTS の章を参照して下さい。

ICs, transistors and diodes whoses functions are equivalent are described here. Therefore, incompatible device names may be described together. For parts replacement, refer to the Spare Parts section in this manual.

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等価回路は IC メーカーの Data Book に従いました。
The circuit diagram of each IC is obtained from the IC data book published by the manufacturer.

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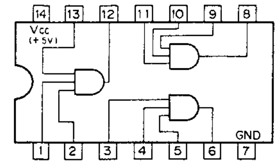
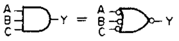
74F11PC (FSC)
TTL 3-INPUT POSITIVE-AND GATE
– TOP VIEW –


14
13
12
11
10
9
8
Vcc
(+5V)
GND
1
2
3
4
5
6
7

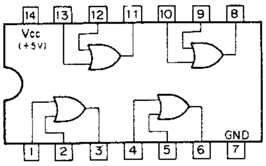


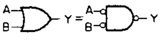
$Y = A \cdot B \cdot C = \overline{\overline{A}+\overline{B}+\overline{C}}$

A	B	C	Y
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	0
1	0	0	0
1	0	1	0
1	1	0	0
1	1	1	1

0;LOW LEVEL
1;HIGH LEVEL

74F32PC (FSC)
TTL 2-INPUT POSITIVE-OR GATE
– TOP VIEW –


14
13
12
11
10
9
8
Vcc
(+5V)
GND
1
2
3
4
5
6
7

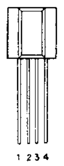


$Y = A + B = \overline{\overline{A} \cdot \overline{B}}$

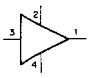
A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1

0;LOW LEVEL
1;HIGH LEVEL

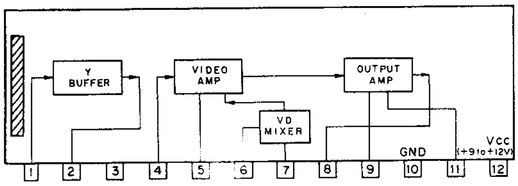
AN607P (MATSUSHITA)
WIDE BAND AMPLIFIER
— PRINTED SIDE VIEW —



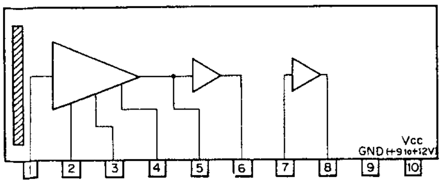
1: OUTPUT
2: Vcc (+12V)
3: INPUT
4: GND



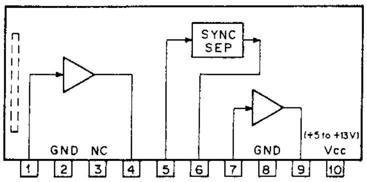
BX388L (ROHM)
VIDEO AMP/VD MIXER
— PRINTED SIDE —


Y
BUFFER
VIDEO
AMP
OUTPUT
AMP
VD
MIXER
GND
Vcc
(+9 to +12V)
1
2
3
4
5
6
7
8
9
10
11
12

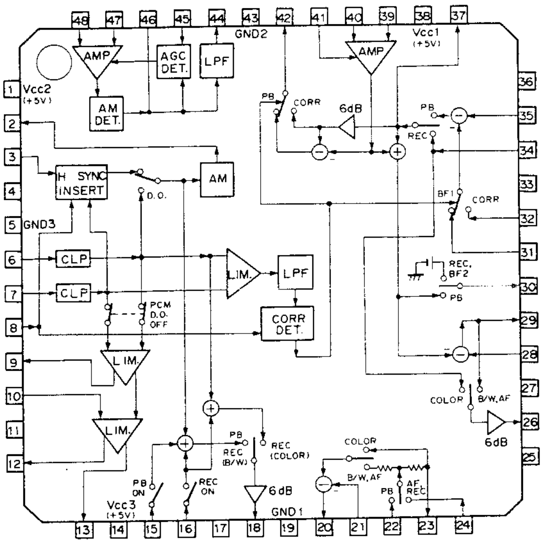
BX389L (ROHM)
VIDEO AMPLIFIER
— PRINTED SIDE —


Vcc
GND
(+9 to +12V)
1
2
3
4
5
6
7
8
9
10

BX3915A (SONY)
SYNC SEPARATOR
— PRINTED SIDE —


SYNC
SEP
GND
NC
GND
(+5 to +13V)
Vcc
1
2
3
4
5
6
7
8
9
10

CX20031 (SONY) FLAT PACKAGE
Y/C SEPARATION COMB FILTER
– TOP VIEW –


48
47
46
45
44
43
42
41
40
39
38
37
GND2
Vcc1
(+5V)
AMP
AGC
DET.
LPF
AMP
Vcc2
(+5V)
AM
DET.
PB
CORR
6dB
PB
REC
H SYNC
INSERT
D.O.
AM
BF1
CORR
GND3
CLP
CLP
LIM.
LPF
REC,
BF2
PB
PCM
D.O.
OFF
CORR
DET.
LIM.
COLOR
B/W,AF
LIM.
6dB
PB
REC
(B/W)
REC
(COLOR)
COLOR
B/W,AF
PB
ON
REC
ON
6dB
AF
REC
PB
Vcc3
(+5V)
GND1
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36

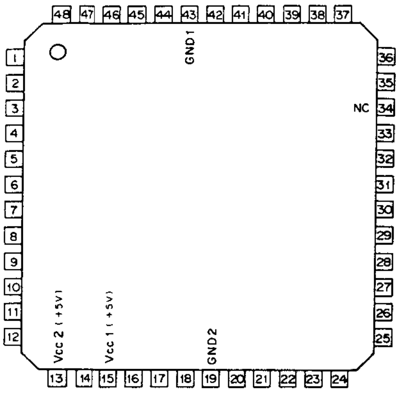
PIN No.	PIN NAME	PIN No.	PIN NAME	PIN No.	PIN NAME
1	Vcc2	17	DOP IN	33	BF2
2	AM OUT	18	Y OUT2	34	REC VIDEO IN
3	HD IN	19	GND1	35	PB CHROMA IN
4	XTAL	20	Y OUT1	36	PB 5V IN
5	GND3	21	PB MIX IN2	37	CDL OUT
6	YD IN	22	PB Y IN	38	Vcc1
7	Y IN	23	FSC TRAP	39	CDL1 IN
8	CORR ADJ	24	REC Y IN	40	CDL2 IN
9	Y-YD OUT	25	ACK IN	41	CD ADJ
10	Y-YD IN	26	REC Y OUT	42	C OUT
11	PCM IN	27	BF1	43	GND2
12	LIM OUT2	28	Y BPF IN	44	YD OUT
13	LIM OUT1	29	Y OUT3	45	YD ADJ
14	Vcc3	30	CT OUT	46	PEAK HOLD
15	PB MIX IN1	31	CT IN2	47	YDL1 IN
16	REC MIX IN	32	CT IN1	48	YDL2 IN

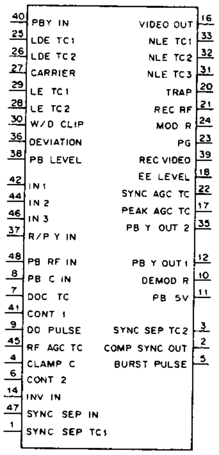
ACK ; ACKNOWLEDGMENT
ADJ ; ADJUSTMENT
AF ; AFTER RECODING
AGC ; AUTOMATIC GAIN CONTROL
AM ; AMPLITUDE MODULATION
AMP ; AMPLIFIER
BF ; BURST FLAG
BPF ; BAND PASS FILTER
C ; CHROMA
CD ; DEFERED C
CDL ; C DELAY LINE
CLP ; CLAMP
CORR; CORRELATION
CT ; C CROSSTALK
DET ; DETECTOR
DOP ; DROP-OUT
D.O ; DROP-OUT
FSC ; FREQUENCY OF SUB-CARRIER
GND ; GROUND
H ; HORIZONTAL
HD ; H DRIVE PULSE
IN ; INPUT
LIM ; LIMITER
LPF ; LOW PASS FILTER
MIX ; MIXER
OUT ; OUTPUT
PB ; PLAYBACK
PCM ; PULSE CODE MODULATION
REC ; RECORDING
SYNC; SYNCHRONIZATION
Vcc ; POWER
XTAL; CRYSTAL
Y ; LUMINANCE
YD ; DEFERRED Y
YDL ; Y DELAY LINE

CX20030 (SONY) FLAT PACKAGE

VIDEO Y SIGNAL PROCESSOR

– TOP VIEW –


48 47 46 45 44 43 42 41 40 39 38 37
GND1
1 2 3 4 5 6 7 8 9 10 11 12
36 35 34 33 32 31 30 29 28 27 26 25
NC
Vcc 2 (+5V)
Vcc 1 (+5V)
GND2
13 14 15 16 17 18 19 20 21 22 23 24


40 PBY IN
25 LDE TC1
26 LDE TC2
27 CARRIER
29 LE TC1
28 LE TC2
30 W/D CLIP
36 DEVIATION
38 PB LEVEL
42 IN1
44 IN2
46 IN3
37 R/P Y IN
48 PB RF IN
8 PB C IN
7 DOC TC
41 CONT 1
9 DO PULSE
45 RF AGC TC
4 CLAMP C
6 CONT 2
14 INV IN
47 SYNC SEP IN
1 SYNC SEP TC1
VIDEO OUT 16
NLE TC1 33
NLE TC2 32
NLE TC3 31
TRAP 20
REC RF 21
MOD R 24
PG 23
REC VIDEO 39
EE LEVEL 18
SYNC AGC TC 22
PEAK AGC TC 17
PB Y OUT 2 35
PB Y OUT1 12
DEMOD R 10
PB 5V 11
SYNC SEP TC2 3
COMP SYNC OUT 2
BURST PULSE 5

(V_{DD} = + 5V)

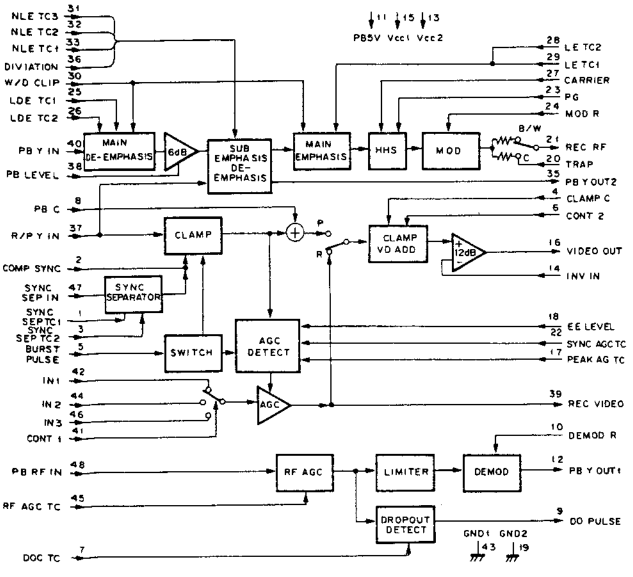
PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1	I	SYNC SEP TC1	17	I	PEAK AGC TC	33	I	NLE TC1
2	O	COMP SYNC	18	I	EE LEVEL	34	–	NC
3	I	SYNC SEP TC2	19	–	GND2	35	O	PB Y OUT2
4	I	CLAMP C	20	I	TRAP	36	I	DEVIATION
5	I	BURST PULSE	21	O	REC RF	37	I	R/P Y IN
6	I	CONT2	22	I	SYNC AGC TC	38	I	PB LEVEL
7	I	DOC TC	23	I	PG	39	O	REC VIDEO
8	I	PB C	24	I	MOD R	40	I	PB Y IN
9	O	DO PULSE	25	I	LDE TC1	41	I	CONT1
10	I	DEMOD R	26	I	LDE TC2	42	I	IN1
11	I	PB 5V	27	I	CARRIER	43	–	GND1
12	O	PB Y OUT1	28	I	LE TC2	44	I	IN2
13	–	Vcc2	29	I	LE TC1	45	I	RF AGC TC
14	I	INV IN	30	I	W/D CLIP	46	I	IN3
15	–	Vcc1	31	I	NLE TC3	47	I	SYNC SEP IN
16	O	VIDEO OUT	32	I	NLE TC2	48	I	PB RF IN

INPUT

BURST PULSE : BURST PULSE INPUT
CARRIER : FM MODULATOR CARRIER CONTROL INPUT
CLAMP C : EXTERNAL CAPACITOR FOR CLAMPING INPUT
CONT 1 : INTERNAL SWITCH CONTROL INPUT
CONT 2 : MUTING AND VD-ADD CONTROL INPUT
DEMOD R : EXTERNAL RESISTOR FOR FM DEMODULATOR INPUT
DEVIATION : DEVIATION CONTROL INPUT
DOC TC : EXTERNAL CAPACITOR FOR DROPOUT DETECTION INPUT
EE LEVEL : SYNC AGC CONTROL INPUT
IN 1 – IN 3 : RECORDING VIDEO SIGNAL INPUTS
INV IN : INVERTING INPUT FOR VIDEO CIRCUIT
LDE TC1,TC2 : EXTERNAL RESISTOR FOR LINEAR DE-EMPHASIS INPUTS
LE TC1,TC2 : EXTERNAL CR FOR LINEAR EMPHASIS INPUTS
MOD R : EXTERNAL RESISTOR FOR FM MODULATOR INPUT
NLE TC1 – NLE TC3
: EXTERNAL CAPACITOR FOR NON-LINEAR EMPHASIS INPUTS
PB 5V : POWER FOR PLAYBACK SYSTEM INPUT
PB C : PB CHROMA INPUT AND M/C CONTROL INPUT
PB LEVEL : PB Y OUT2 SIGNAL CONTROL INPUT
PB RF IN : PB RF (FM) INPUT
PB Y IN : PB Y SIGNAL FOR DE-EMPHASIS INPUT
PEAK AGC TC : EXTERNAL CR INPUT FOR PEAK AGC
PG : PG (30Hz) SIGNAL INPUT
RF AGC TC : EXTERNAL CR FOR RF AGC INPUT
R/P Y IN : Y SIGNAL FOR CLAMPING INPUT
SYNC AGC TC : EXTERNAL CR INPUT FOR SYNC AGC
SYNC SEP IN : SYNC SEPARATION SIGNAL INPUT
SYNC SEP TC1,TC2
: EXTERNAL CR INPUT FOR SYNC SEPARATION
TRAP : TRAP INPUT
W/D CLIP : LINEAR EMPHASIS AND W/D CLIP CONTROL INPUT

OUTPUT

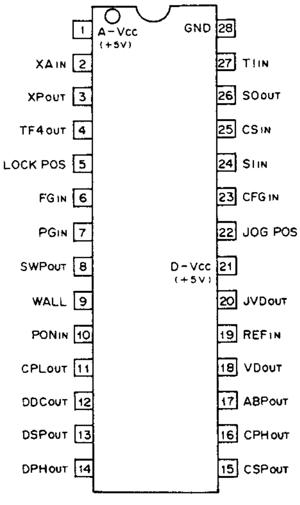
COMP SYNC : COMPOSITE SYNC OUTPUT
DO PULSE : DROPOUT PULSE OUTPUT
PB Y OUT1 : FREQUENCY DEMODULATOR OUTPUT
PB Y OUT2 : PB Y OUTPUT
REC RF : Y-FM SIGNAL OUTPUT
REC VIDEO : AMPLIFIED Y SIGNAL OUTPUT
VIDEO OUT : VIDEO OUTPUT

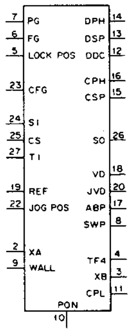

NLE TC3 31
NLE TC2 32
NLE TC1 33
DIVIATION 36
W/D CLIP 30
LDE TC1 25
LDE TC2 26
PB Y IN 40
PB LEVEL 38
PB C 8
R/P Y IN 37
COMP SYNC 2
SYNC SEP IN 47
SYNC SEP TC1 1
SYNC SEP TC2 3
BURST PULSE 5
IN1 42
IN2 44
IN3 46
CONT 1 41
PB RF IN 48
RF AGC TC 45
DOC TC 7
11 15 13
PB5V Vcc1 Vcc2
MAIN DE-EMPHASIS
6dB
SUB EMPHASIS DE-EMPHASIS
MAIN EMPHASIS
HHS
MOD
B/W
C
28 LE TC2
29 LE TC1
27 CARRIER
23 PG
24 MOD R
21 REC RF
20 TRAP
35 PB Y OUT2
4 CLAMP C
6 CONT 2
CLAMP
P
R
CLAMP VD ADD
12dB
16 VIDEO OUT
14 INV IN
SYNC SEPARATOR
SWITCH
AGC DETECT
AGC
18 EE LEVEL
22 SYNC AGC TC
17 PEAK AG TC
39 REC VIDEO
10 DEMOD R
RF AGC
LIMITER
DEMOD
12 PB Y OUT1
DROPOUT DETECT
9 DO PULSE
GND1 GND2
43 19

CX20035 (SONY) FLAT PACKAGE

DRUM/CAPSTAN SERVO CONTROLLER

– TOP VIEW –


1 A-Vcc (+5V)
XA IN 2
XP OUT 3
TF4 OUT 4
LOCK POS 5
FG IN 6
PG IN 7
SWP OUT 8
WALL 9
PON IN 10
CPL OUT 11
DDC OUT 12
DSP OUT 13
DPH OUT 14
GND 28
27 TI IN
26 SO OUT
25 CS IN
24 SI IN
23 CFG IN
22 JOG POS
D-Vcc (+5V) 21
20 JVD OUT
19 REF IN
18 VD OUT
17 ABP OUT
16 CPH OUT
15 CSP OUT


7 PG
6 FG
5 LOCK POS
23 CFG
24 SI
25 CS
27 TI
19 REF
22 JOG POS
2 XA
9 WALL
DPH 14
DSP 13
DDC 12
CPH 16
CSP 15
SO 26
VD 18
JVD 20
ABP 17
SWP 8
TF4 4
XB 3
CPL 11
PON 10

INPUT

CFG : CAPSTAN FG INPUT
CS : SYSCON INTERFACE
FG : DRUM FG INPUT
PG : DRUM PG INPUT
PON : POWER ON INPUT
REF IN : REF VOLTAGE INPUT
SI : SYSCON INTERFACE
TI : SYSCON INTERFACE
XA : SUBCARRIER INPUT OR X'TAL

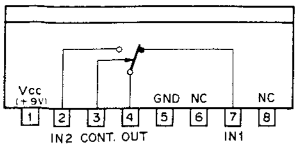
OUTPUT

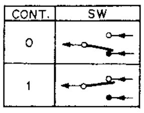
ABP : 60/50Hz TIMING OUTPUT
CPH : CAPSTAN PHASE ERROR OUTPUT
CPL : CAPSTAN PHASE LATCH OUTPUT
CSP : CAPSTAN SPEED ERROR OUTPUT
DDC : DRUM PHASE DC ERROR OUTPUT
DPH : DRUM PHASE ERROR OUTPUT
DSP : DRUM SPEED ERROR OUTPUT
JVD : FALSE VD OUTPUT
SO : SYSCON INTERFACE
SWP : SWITCHING PULSE OUTPUT
TF4 : SYSTEM CLOCK OUTPUT 1/32fsc
VD : VD OUTPUT
XB : X'TAL

OTHERS

LOCK POS : EXTERNAL CR
JOG POS : EXTERNAL CR
WALL : I²L WALL BIAS

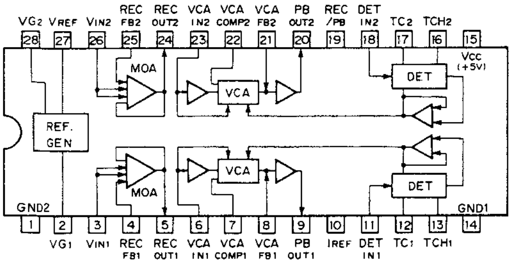
CX20061 (SONY)
ANALOG SWITCH
— SIDE VIEW —


Vcc
(+9V)
GND
NC
NC
1
2
3
4
5
6
7
8
IN2
CONT.
OUT
IN1



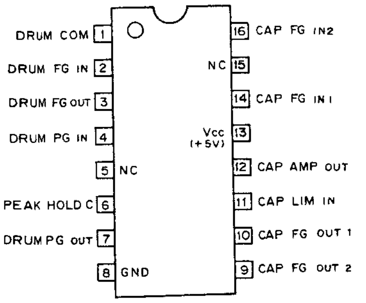
0; LOW LEVEL
1; HIGH LEVEL

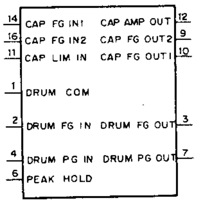
CX20099 (SONY) FLAT PACKAGE
VOLTAGE CONTROLLED AMP/DETECTOR/MAIN OPERATIONAL AMP
— TOP VIEW —

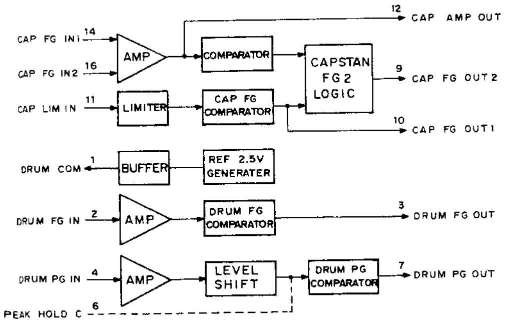

VG2
VREF
VIN2
REC FB2
REC OUT2
VCA IN2
VCA COMP2
VCA FB2
PB OUT2
REC /PB
DET IN2
TC2
TCH2
28
27
26
25
24
23
22
21
20
19
18
17
16
15
MOA
VCA
DET
Vcc (+5V)
REF. GEN
VCA
DET
MOA
GND2
GND1
1
2
3
4
5
6
7
8
9
10
11
12
13
14
VG1
VIN1
REC FB1
REC OUT1
VCA IN1
VCA COMP1
VCA FB1
PB OUT1
IREF
DET IN1
TC1
TCH1

DET ; DETECTOR
TC ; TIME CONSTANT
TCH ; TIME CONSTANT HOLD
VCA ; VOLTAGE CONTROLLED AMP

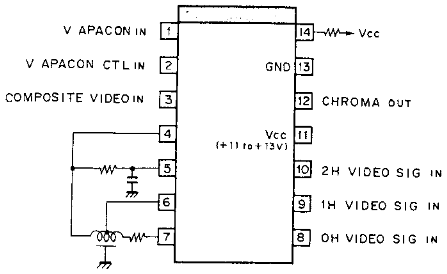
CX20115A (SONY) FLAT PACKAGE
MOTOR SENSE AMP
– TOP VIEW –

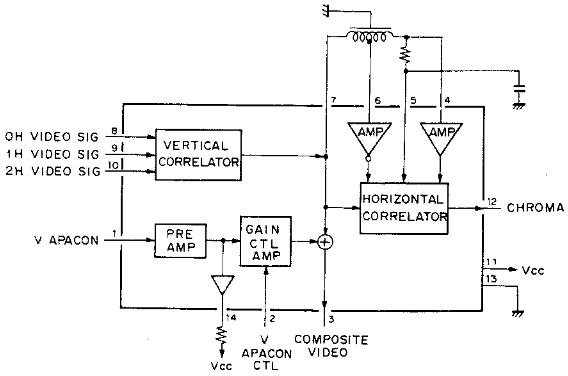

DRUM COM 1
DRUM FG IN 2
DRUM FG OUT 3
DRUM PG IN 4
5 NC
PEAK HOLD C 6
DRUM PG OUT 7
8 GND
16 CAP FG IN2
NC 15
14 CAP FG IN1
Vcc (+5V) 13
12 CAP AMP OUT
11 CAP LIM IN
10 CAP FG OUT 1
9 CAP FG OUT 2


14 CAP FG IN1
16 CAP FG IN2
11 CAP LIM IN
1 DRUM COM
2 DRUM FG IN
4 DRUM PG IN
6 PEAK HOLD
CAP AMP OUT 12
CAP FG OUT2 9
CAP FG OUT1 10
DRUM FG OUT 3
DRUM PG OUT 7


CAP FG IN1 14
CAP FG IN2 16
CAP LIM IN 11
AMP
COMPARATOR
LIMITER
CAP FG COMPARATOR
CAPSTAN FG2 LOGIC
12 CAP AMP OUT
9 CAP FG OUT 2
10 CAP FG OUT1
DRUM COM 1
BUFFER
REF 2.5V GENERATER
DRUM FG IN 2
AMP
DRUM FG COMPARATOR
3 DRUM FG OUT
DRUM PG IN 4
AMP
LEVEL SHIFT
DRUM PG COMPARATOR
7 DRUM PG OUT
PEAK HOLD C 6

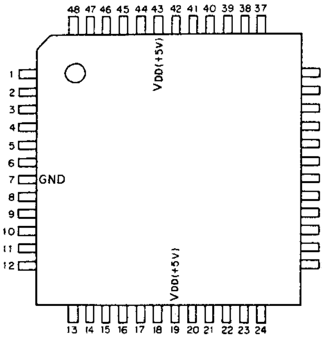
CX22013 (SONY)
DYNAMIC COMB FILTER
— TOP VIEW —


V APACON IN 1
V APACON CTL IN 2
COMPOSITE VIDEO IN 3
4
5
6
7
14 Vcc
GND 13
12 CHROMA OUT
Vcc (+11 to +13V) 11
10 2H VIDEO SIG IN
9 1H VIDEO SIG IN
8 0H VIDEO SIG IN


7
6
5
4
0H VIDEO SIG 8
1H VIDEO SIG 9
2H VIDEO SIG 10
VERTICAL CORRELATOR
AMP
AMP
HORIZONTAL CORRELATOR
12 CHROMA
V APACON 1
PRE AMP
GAIN CTL AMP
11 Vcc
13
14 Vcc
2 V APACON CTL
3 COMPOSITE VIDEO

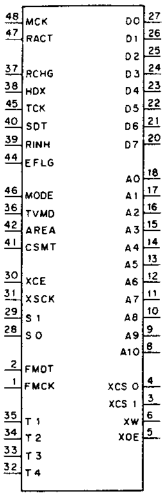
CX23011 (SONY) FLAT PACKAGE

C-MOS PCM AUDIO SIGNAL PROCESSOR
– TOP VIEW –


GND
VDD(+5V)
VDD(+5V)
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48

(VDD = + 5V)

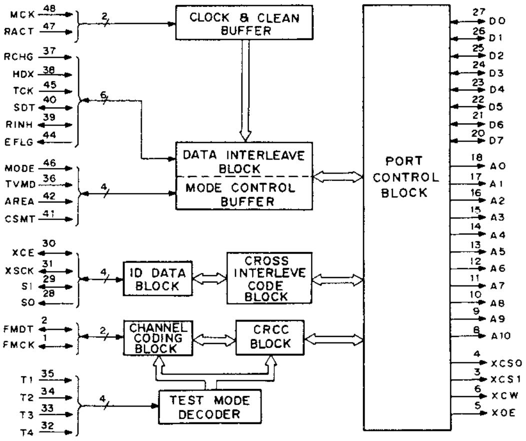
PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1	I/O	FMCK	25	I/O	D2
2	I/O	FMDT	26	I/O	D1
3	O	XCS1	27	I/O	D0
4	O	XCS0	28	O	S0
5	O	XOE	29	I/O	S1
6	O	XW	30	I/O	XCE
7	–	GND	31	I/O	XSCK
8	O	A10	32	I	T4
9	O	A9	33	I	T3
10	O	A8	34	I	T2
11	O	A7	35	I	T1
12	O	A6	36	I	TVMD
13	O	A5	37	I	RCHG
14	O	A4	38	I	HDX
15	O	A3	39	I/O	RINH
16	O	A2	40	I/O	SDT
17	O	A1	41	I/O	CSMT
18	O	A0	42	I	AREA
19	–	VDD	43	–	VDD
20	I/O	D7	44	O	EFLG
21	I/O	D6	45	I	TCK
22	I/O	D5	46	I	MODE
23	I/O	D4	47	I	RACT
24	I/O	D3	48	I	MCK


48 MCK
47 RACT
37 RCHG
38 HDX
45 TCK
40 SDT
39 RINH
44 EFLG
46 MODE
36 TVMD
42 AREA
41 CSMT
30 XCE
31 XSCK
29 S1
28 SO
2 FMDT
1 FMCK
35 T1
34 T2
33 T3
32 T4
D0 27
D1 26
D2 25
D3 24
D4 23
D5 22
D6 21
D7 20
A0 18
A1 17
A2 16
A3 15
A4 14
A5 13
A6 12
A7 11
A8 10
A9 9
A10 8
XCS 0 4
XCS 1 3
XW 6
XOE 5

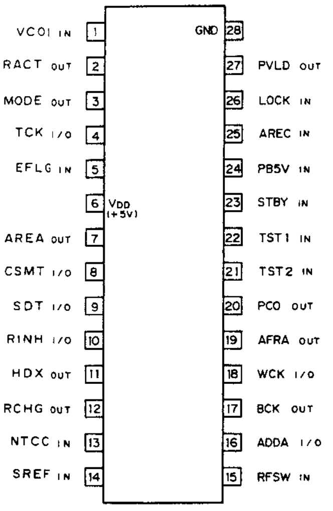
INPUT
AREA : PCM AREA SIGNAL INPUT TERMINAL
HDX : TIMING CLOCK TO TRANSPORT DATA TO CX23012
MCK : NTSC／CCIR CLOCK INPUT
MODE : REC／PB CONTROL SIGNAL INPUT TERMINAL OF ALL PCM
RACT : START／STOP CONTROL INPUT OF CX23012
RCHG : SELECT TWO 16K-RAM USING ON TBC OR ERROR CORRECTION
TCK : TIMING CLOCK TO TRANSPORT DATA TO CX23012
TVMD : NTSC／CCIR STATUS SIGNAL INPUT
T1 – T4 : TEST MODE INPUTS

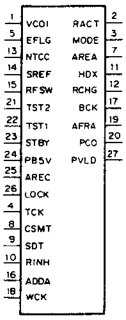
OUTPUT
A0 – A10 : RAM ADDRESS OUTPUTS
EFLG : OUTPUT HIGH LEVEL IN CASE OF ERROR CORRECTION DISABLE
SO : ID DATA OUTPUT
XCS0,XCS1 : TWO 16K-RAM SELECT CONTROL OUTPUTS
XOE : 16K-RAM CONTROL OUTPUT
XW : 16K-RAM WRITING OUTPUT

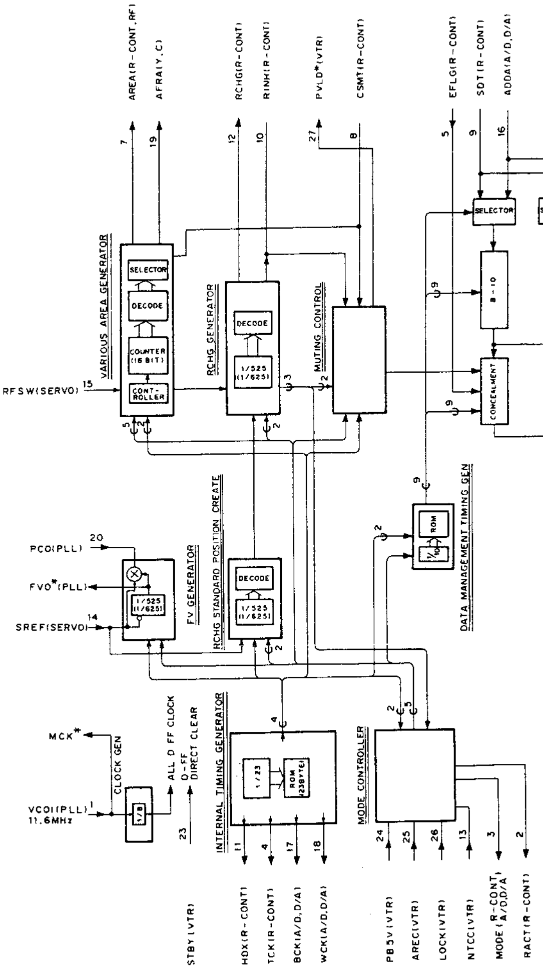
INPUT/OUTPUT
CSMT : (PB) OUTPUT HIGH LEVEL AT MUTE MODE ON CX23012
: (REC) INPUT DATA BLOCK WRITING ON HIGH LEVEL
D0 – D7 : RAM DATA INPUT／OUTPUTS
FMCK : FM CLOCK INPUT／OUTPUT
FMDT : FM DATA INPUT／OUTPUT
RINH : (PB) PROHIBIT TO TURN OVER RCHG SIGNAL
: (REC) PROHIBIT TO WRITE A／D DATA TO 16K-RAM
SDT : 8 BIT SERIAL DATA TRANSFER TERMINAL
SI : ID DATA INPUT／OUTPUT
XCE : ID DATA TRANSPORTION SIGNAL INPUT／OUTPUT
XSCK : ID DATA TRANSPORTION CLOCK INPUT／OUTPUT


MCK 48
RACT 47
RCHG 37
HDX 38
TCK 45
SDT 40
RINH 39
EFLG 44
MODE 46
TVMD 36
AREA 42
CSMT 41
XCE 30
XSCK 31
SI 29
SO 28
FMDT 2
FMCK 1
T1 35
T2 34
T3 33
T4 32
2
6
4
4
2
4
CLOCK & CLEAN BUFFER
DATA INTERLEAVE BLOCK
MODE CONTROL BUFFER
ID DATA BLOCK
CROSS INTERLEVE CODE BLOCK
CHANNEL CODING BLOCK
CRCC BLOCK
TEST MODE DECODER
PORT CONTROL BLOCK
27 D0
26 D1
25 D2
24 D3
23 D4
22 D5
21 D6
20 D7
18 A0
17 A1
16 A2
15 A3
14 A4
13 A5
12 A6
11 A7
10 A8
9 A9
8 A10
4 XCS0
3 XCS1
6 XCW
5 XOE

CX23012 (SONY) FLAT PACKAGE
C-MOS PCM AUDIO SIGNAL PROCESSOR
— TOP VIEW —

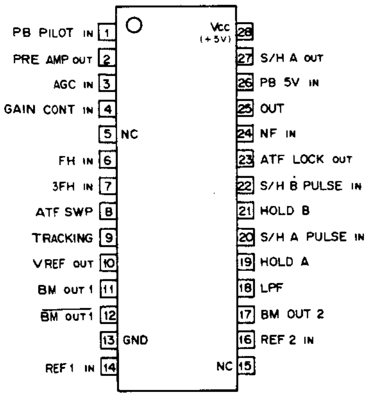

VCOI IN 1
RACT OUT 2
MODE OUT 3
TCK I/O 4
EFLG IN 5
6 VDD (+5V)
AREA OUT 7
CSMT I/O 8
SDT I/O 9
RINH I/O 10
HDX OUT 11
RCHG OUT 12
NTCC IN 13
SREF IN 14
GND 28
27 PVLD OUT
26 LOCK IN
25 AREC IN
24 PB5V IN
23 STBY IN
22 TST1 IN
21 TST2 IN
20 PCO OUT
19 AFRA OUT
18 WCK I/O
17 BCK OUT
16 ADDA I/O
15 RFSW IN

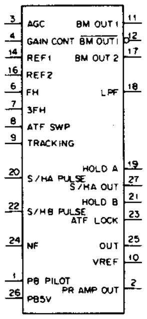

1 VCOI
5 EFLG
13 NTCC
14 SREF
15 RFSW
21 TST2
22 TST1
23 STBY
24 PB5V
25 AREC
26 LOCK
4 TCK
8 CSMT
9 SDT
10 RINH
16 ADDA
18 WCK
RACT 2
MODE 3
AREA 7
HDX 11
RCHG 12
BCK 17
AFRA 19
PCO 20
PVLD 27

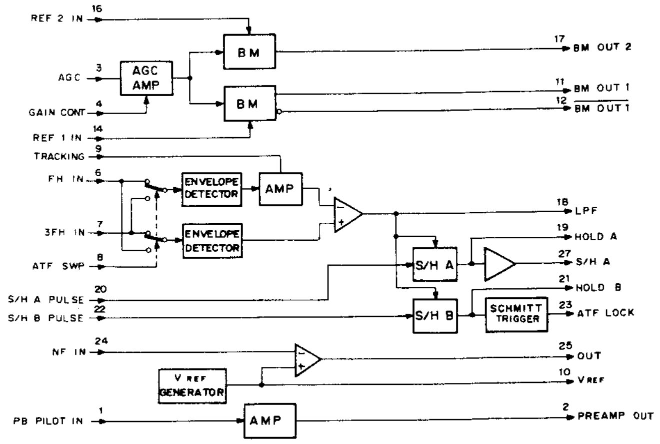

AREA(R-CONT,RF)
AFRA(Y,C)
RCHG(R-CONT)
RINH(R-CONT)
PVLD*(VTR)
CSMT(R-CONT)
EFLG(R-CONT)
SDT(R-CONT)
ADDA(A/D,D/A)
SELECTOR
SELECTOR
VARIOUS AREA GENERATOR
SELECTOR
DECODE
COUNTER (16 BIT)
CONT-ROLLER
RCHG GENERATOR
DECODE
1/525 (1/625)
MUTING CONTROL
8-10
CONCEALMENT
RFSW(SERVO)
DATA MANAGEMENT TIMING GEN
ROM
PCO(PLL)
FVO*(PLL)
SREF(SERVO)
1/525 (1/625)
FV GENERATOR
RCHG STANDARD POSITION CREATE
DECODE
1/525 (1/625)
MCK*
CLOCK GEN
VCO(PLL) 11.6MHz
1/2
ALL D FF CLOCK
D-FF DIRECT CLEAR
INTERNAL TIMING GENERATOR
1/23
ROM (23BYTE)
MODE CONTROLLER
STBY(VTR)
HDX(R-CONT)
TCK(R-CONT)
BCK(A/D,D/A)
WCK(A/D,D/A)
PB5V(VTR)
AREC(VTR)
LOCK(VTR)
NTCC(VTR)
MODE(R-CONT A/D,D/A)
RACT(R-CONT)

ADDA ; TRANSFER TERMINAL OF 10 BIT SERIAL DATA
AFRA ; AREA SIGNAL OUTPUT TERMINAL AT AFTER REC
AREA ; PCM AREA SIGNAL OUTPUT TERMINAL
AREC ; AFTER REC CONTROL SIGNAL
CSMT ; (PB) OUTPUT "H" LEVEL AT MUTE MODE ON CX23011
(REC) OUTPUT DATA BLOCK WRITING ON "H" LEVEL
EFLG ; OUTPUT "H" LEVEL IN CASE OF ERROR CORRECTION DISABLE
HDX ; TIMING CLOCK TO TRANSPORT DATA TO CX23011
LOCK ; APPOINT TO START OR STOP PCM SYSTEM
MODE ; REC/PB CONTROL SIGNAL OUTPUT TERMINAL OF ALL PCM
NTCC ; "H" ; NTSC MODE/"L" ; CCIR MODE
PB5V ; REC/PB CONTROL SIGNAL
PCO ; COMPARE fv AND SREF'S PHASE
PVLD ; INDICATE PCM DATA ON THE TAPE
RACT ; START/STOP CONTROL OUTPUT OF CX23011
RCHG ; SELECT TWO 16K RAM USING ON TBC OR ERROR CORRECTION
RFSW ; RF SWITCHING PULSE INPUT TERMINAL
RINH ; (PB) PROHIBIT TO TURN OVER RCHG SIGNAL
(REC) PROHIBIT TO WRITE A/D DATA TO 16K-RAM
SDT ; 8 BIT SERIAL DATA TRANSFAR TERMINAL
SREF ; TIMING SIGNAL INPUT TERMINAL OF PCM
STBY ; INITIALIZE AND POWER SAVE MODE TERMINAL OF PCM
TCK ; TIMING CLOCK TO TRANSPORT DATA TO CX23011
TST1/2 ; TEST MODE CONTROL TERMINAL 1/2
VC0I ; CLOCK INPUT TERMINAL
WCK ; TIMING CLOCK TO TRANSPORT DATA TO A/D, DIA CONVERTER

CXA1042M (SONY) FLAT PACKAGE
AUTOMATIC TRACKING SENSOR
– TOP VIEW –


PB PILOT IN 1
PRE AMP OUT 2
AGC IN 3
GAIN CONT IN 4
5 NC
FH IN 6
3FH IN 7
ATF SWP 8
TRACKING 9
VREF OUT 10
BM OUT1 11
BM OUT1 12
13 GND
REF1 IN 14
Vcc (+5V) 28
27 S/H A OUT
26 PB 5V IN
25 OUT
24 NF IN
23 ATF LOCK OUT
22 S/H B PULSE IN
21 HOLD B
20 S/H A PULSE IN
19 HOLD A
18 LPF
17 BM OUT 2
16 REF 2 IN
NC 15


3 AGC
4 GAIN CONT
14 REF1
16 REF2
6 FH
7 3FH
8 ATF SWP
9 TRACKING
20 S/HA PULSE
22 S/HB PULSE
24 NF
1 PB PILOT
26 PB5V
BM OUT1 11
BM OUT1 12
BM OUT2 17
LPF 18
HOLD A 19
S/HA OUT 27
HOLD B 21
ATF LOCK 23
OUT 25
VREF 10
PR AMP OUT 2

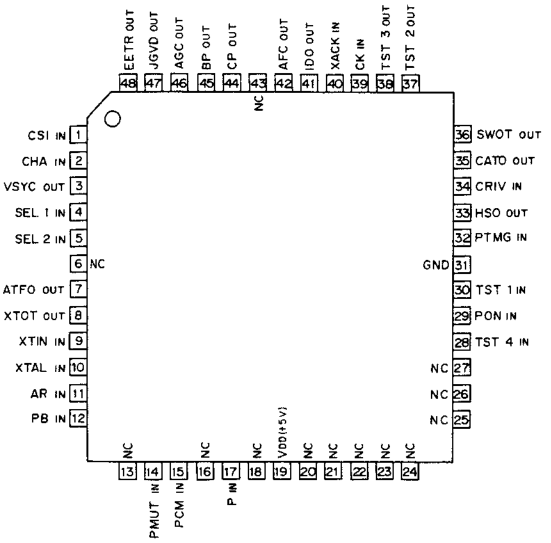

REF 2 IN 16
AGC 3
AGC AMP
GAIN CONT 4
REF 1 IN 14
TRACKING 9
FH IN 6
3FH IN 7
ATF SWP 8
BM
BM
17 BM OUT 2
11 BM OUT 1
12 BM OUT1
ENVELOPE DETECTOR
ENVELOPE DETECTOR
AMP
18 LPF
19 HOLD A
27 S/H A
21 HOLD B
23 ATF LOCK
S/H A
S/H B
SCHMITT TRIGGER
S/H A PULSE 20
S/H B PULSE 22
NF IN 24
25 OUT
10 VREF
V REF GENERATOR
PB PILOT IN 1
AMP
2 PREAMP OUT

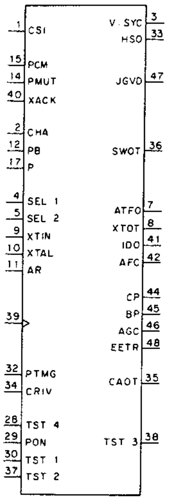
INPUT
3FH IN : 47KHz BPF SIGNAL INPUT
AGC IN : AGC INPUT
FH IN : 16KHz BPF SIGNAL INPUT
GAIN CONT : AGC CONTROL INPUT
NF IN : OP AMP NEGATIVE PHASE INPUT
PB 5V : REC/PB CHANGE SIGNAL INPUT
PB PILOT IN : PB PILOT SIGNAL INPUT
REF 1 IN : MULTIPLIER'S REF PILOT SIGNAL INPUT
REF 2 IN : MULTIPLIER'S REF PILOT SIGNAL INPUT
S/H A PULSE : S/H TIMING SIGNAL INPUT

OUTPUT
ATF LOCK : LOCK DETECT SIGNAL OUTPUT
$\overline{\text{BM OUT1}}$: MULTIPLIER'S NEGATIVE PHASE OUTPUT
BM OUT1 : MULTIPLIER'S POSITIVE PHASE OUTPUT
BM OUT2 : MULTIPLIER'S POSITIVE PHASE OUTPUT
OUT : OP AMP POSITIVE PHASE OUTPUT
PRE AMP OUT : PRE AMP OUTPUT
S/H A OUT : SAMPLE HOLD A PULSE SIGNAL OUTPUT
V_{REF} : REF VOLTAGE OUTPUT

OTHERS
ATF SWP : SUBTRACTOR'S POLARITY CHANGE
HOLD A, B : S/H PULSE TIME CONSTANT HOLD
LPF : ENVEROPE DETECTION
TRACKING : TRACKING ADJUSTMENT

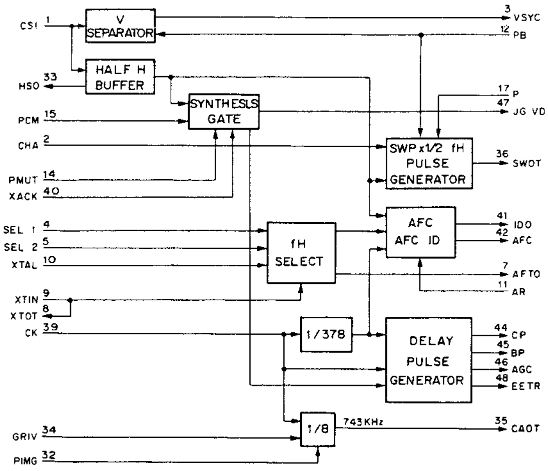
CX23054 (SONY) FLAT PACKAGE
C-MOS PCM/CHROMA SYNC PROCESSOR
– TOP VIEW –


1 CSI IN
2 CHA IN
3 VSYC OUT
4 SEL 1 IN
5 SEL 2 IN
6 NC
7 ATFO OUT
8 XTOT OUT
9 XTIN IN
10 XTAL IN
11 AR IN
12 PB IN
13 NC
14 PMUT IN
15 PCM IN
16 NC
17 P IN
18 NC
19 VDD(+5V)
20 NC
21 NC
22 NC
23 NC
24 NC
25 NC
26 NC
27 NC
28 TST 4 IN
29 PON IN
30 TST 1 IN
31 GND
32 PTMG IN
33 HSO OUT
34 CRIV IN
35 CATO OUT
36 SWOT OUT
37 TST 2 OUT
38 TST 3 OUT
39 CK IN
40 XACK IN
41 IDO OUT
42 AFC OUT
43 NC
44 CP OUT
45 BP OUT
46 AGC OUT
47 JGVD OUT
48 EETR OUT

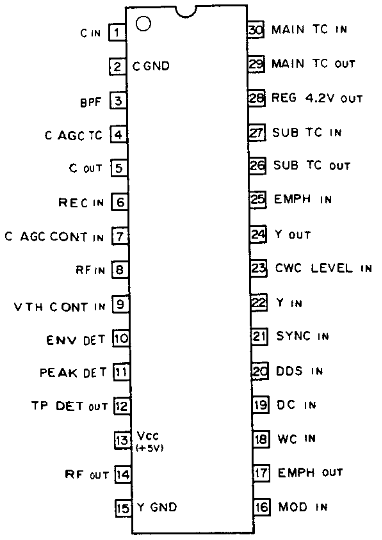

1 CSI
15 PCM
14 PMUT
40 XACK
2 CHA
12 PB
17 P
4 SEL 1
5 SEL 2
9 XTIN
10 XTAL
11 AR
39
32 PTMG
34 CRIV
28 TST 4
29 PON
30 TST 1
37 TST 2
V. SYC 3
HSO 33
JGVD 47
SWOT 36
ATFO 7
XTOT 8
IDO 41
AFC 42
CP 44
BP 45
AGC 46
EETR 48
CAOT 35
TST 3 38

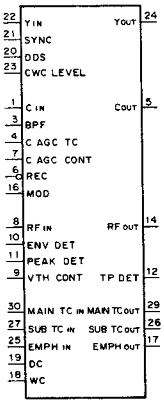
INPUT	
AR	: POST RECORDING AREA SIGNAL INPUT
CHA	: RF SWITCHING PULSE INPUT
CK	: MAIN CLOCK INPUT
CRIV	: CHROMA CARRIER REVERSE MODE INPUT
CSI	: COMPOSITE SYNC INPUT
P	: PAL/NTSC MODE SELECT INPUT
PB	: PB/REC MODE SELECT INPUT
PCM	: EIAJ PCM MODE
PMUT	: PLAY BACK MUTE MODE INPUT
PON	: SYSTEM INITIALIZE INPUT
PTMG	: PAL PS TIMING INPUT
SEL1.2	: ATF FREQUENCY SELECT INPUT
TST1,2.4	: TEST PIN
XACK	: ACK MODE INPUT
XTAL	: ATF PILOT CLOCK INPUT
XTIN	: ATF PILOT GENERATOR INPUT

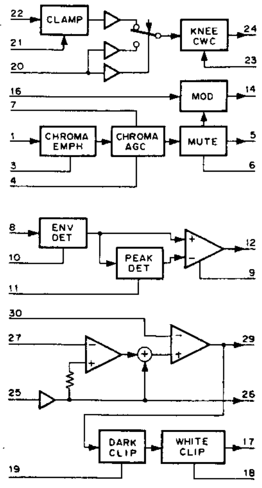
OUTPUT	
AFC	: AFC CONTROL OUTPUT
ATFO	: ATF PILOT OUTPUT
AGC	: SYNC CLAMP/PEDESTAL CLAMP OUTPUT
BP	: BURST TRAP TIMING OUTPUT
CAOT	: CHROMA CARRIER OUTPUT
CP	: BURST CLOCK TIMING OUTPUT
EETR	: EE TRAP OUTPUT
HSO	: H SYNC OUTPUT
IDO	: APC ID/AFC ID CONTROL OUTPUT
JGVD	: VIRS KILLER/PMUT OUTPUT
SWOT	: NTSC PI TIMING OUTPUT
TST3	: TEST PIN
VSYC	: V SYNC SEPARATOR OUTPUT
XTOT	: ATF PILOT GENERATOR OUTPUT


CSI 1
V SEPARATOR
3 VSYC
12 PB
HALF H BUFFER
HSO 33
PCM 15
SYNTHESIS GATE
17 P
47 JG VD
CHA 2
SWP x1/2 fH PULSE GENERATOR
36 SWOT
PMUT 14
XACK 40
SEL 1 4
SEL 2 5
XTAL 10
fH SELECT
AFC AFC ID
41 IDO
42 AFC
7 AFTO
11 AR
XTIN 9
XTOT 8
CK 39
1/378
DELAY PULSE GENERATOR
44 CP
45 BP
46 AGC
48 EETR
GRIV 34
PIMG 32
1/8
743KHz
35 CAOT

CXA1047M (SONY)
VIDEO Y/C REC PROCESSOR
– TOP VIEW –


1 C IN
2 C GND
3 BPF
4 C AGC TC
5 C OUT
6 REC IN
7 C AGC CONT IN
8 RF IN
9 VTH CONT IN
10 ENV DET
11 PEAK DET
12 TP DET OUT
13 Vcc (+5V)
14 RF OUT
15 Y GND
16 MOD IN
17 EMPH OUT
18 WC IN
19 DC IN
20 DDS IN
21 SYNC IN
22 Y IN
23 CWC LEVEL IN
24 Y OUT
25 EMPH IN
26 SUB TC OUT
27 SUB TC IN
28 REG 4.2V OUT
29 MAIN TC OUT
30 MAIN TC IN

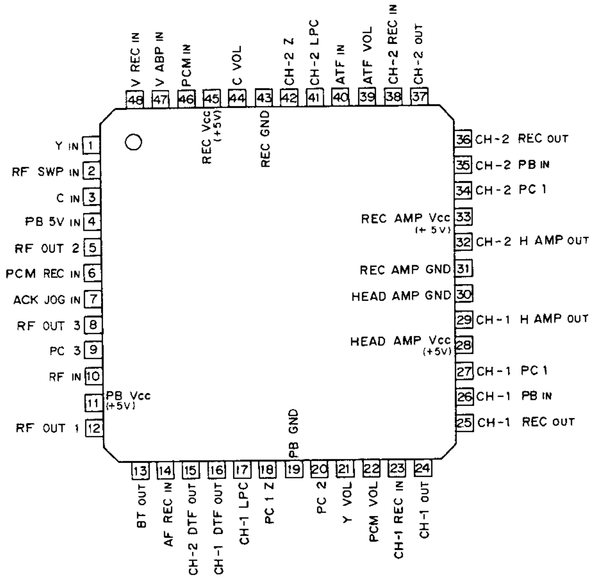

22 Y IN
21 SYNC
20 DDS
23 CWC LEVEL
1 C IN
3 BPF
4 C AGC TC
7 C AGC CONT
6 REC
16 MOD
8 RF IN
10 ENV DET
11 PEAK DET
9 VTH CONT
30 MAIN TC IN
27 SUB TC IN
25 EMPH IN
19 DC
18 WC
YOUT 24
COUT 5
RF OUT 14
TP DET 12
MAIN TC OUT 29
SUB TC OUT 26
EMPH OUT 17


22
CLAMP
21
20
KNEE CWC
24
23
16
7
MOD
14
1
CHROMA EMPH
CHROMA AGC
MUTE
5
3
4
6
8
ENV DET
10
PEAK DET
12
11
9
30
27
29
25
26
DARK CLIP
WHITE CLIP
17
19
18

INPUT	
BPF	: BAND PASS FILTER
C AGC CONT	: CHROMA AGC LEVEL CONTROL
C AGC TC	: CHROMA AGC TIME CONSTANT
C IN	: CHROMA INPUT
CWC LEVEL	: CAMERA WHITE CLIP LEVEL
DC	: DARK CLIP LEVEL
DDS IN	: DATA DISPLAY SYSTEM INPUT
EMPH IN	: EMPHASIS INPUT
ENV DET	: ENVELOP DETECT TIME CONSTANT
MAIN TC IN	: MAIN TIME CONSTANT INPUT
MOD IN	: MODULATOR INPUT
PEAK DET	: PEAK DETECT TIME CONSTANT
REC	: REC/PB SWITCH
RF IN	: PB RF INPUT
SUB TC IN	: SUB EMPHASIS TIME CONSTANT AND LIMITER INPUT
SYNC IN	: COMPOSITE SYNC INPUT
VTH CONT	: ENVELOPE PEAK DETECT LEVEL CONTROL
WC	: WHITE CLIP LEVEL
Y IN	: Y INPUT

OUTPUT	
C OUT	: CHROMA OUTPUT
EMPH OUT	: EMPHASIS OUTPUT
MAIN TC OUT	: MAIN TIME CONSTANT OUTPUT
RF OUT	: FM MODULATOR OUTPUT
SUB TC OUT	: SUB EMPHASIS TIME CONSTANT
TP DET	: ENVELOPE PEAK DETECT OUTPUT
Y OUT	: Y (WITH DDS) OUTPUT

CXA1234AR (SONY) FLAT PACKAGE
VIDEO RF REC/PB AMPLIFIER
– TOP VIEW –


1 Y IN
2 RF SWP IN
3 C IN
4 PB 5V IN
5 RF OUT 2
6 PCM REC IN
7 ACK JOG IN
8 RF OUT 3
9 PC 3
10 RF IN
11 PB Vcc (+5V)
12 RF OUT 1
13 BT OUT
14 AF REC IN
15 CH-2 DTF OUT
16 CH-1 DTF OUT
17 CH-1 LPC
18 PC 1 Z
19 PB GND
20 PC 2
21 Y VOL
22 PCM VOL
23 CH-1 REC IN
24 CH-1 OUT
25 CH-1 REC OUT
26 CH-1 PB IN
27 CH-1 PC 1
28 HEAD AMP Vcc (+5V)
29 CH-1 H AMP OUT
30 HEAD AMP GND
31 REC AMP GND
32 CH-2 H AMP OUT
33 REC AMP Vcc (+5V)
34 CH-2 PC 1
35 CH-2 PB IN
36 CH-2 REC OUT
37 CH-2 OUT
38 CH-2 REC IN
39 ATF VOL
40 ATF IN
41 CH-2 LPC
42 CH-2 Z
43 REC GND
44 C VOL
45 REC Vcc (+5V)
46 PCM IN
47 V ABP IN
48 V REC IN

INPUT

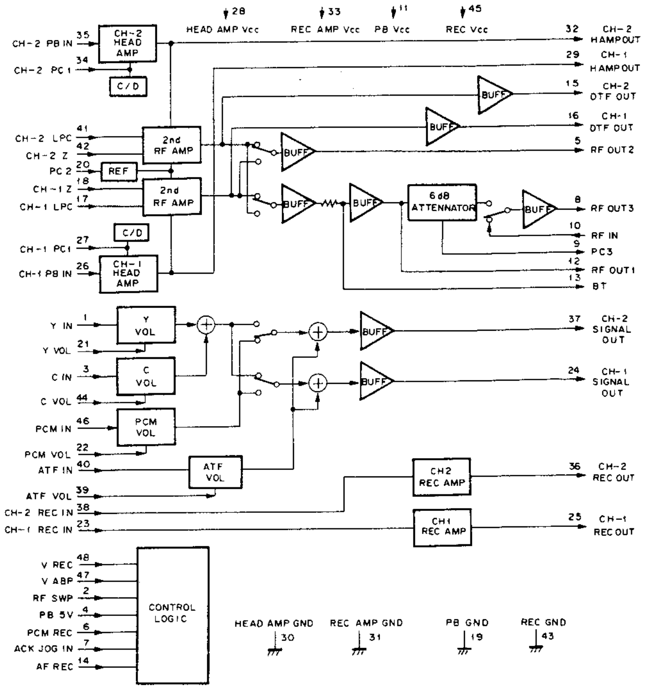
ACK JOG IN	: VIDEO/RF SELECT FOR RF OUT 3
AF REC	: AFTER RECODING MODE
ATF IN	: REC ATF SIGNAL INPUT
ATF VOL	: REC ATF GAIN CONTROL
C IN	: REC CHROMA INPUT
CH-1 PB IN	: CH-1 HEAD AMP INPUT
CH-1 REC IN	: CH-1 REC AMP INPUT
CH-2 PB IN	: CH-2 HEAD AMP INPUT
CH-2 REC IN	: CH-2 REC AMP INPUT
C VOL	: REC CHROMA GAIN CONTROL
PB 5V	: PB ON/OFF CONTROL
PCM IN	: REC PCM SIGNAL INPUT
PCM REC	: PCM AUDIO RECORDING MODE
PCM VOL	: REC PCM GAIN CONTROL
RF IN	: VIDEO INPUT FOR RF OUT 3
RF SWP IN	: RF SWITCHING PULSE INPUT
V ABP IN	: OVER LAP RECORDING MODE INPUT
V REC IN	: VIDEO RECORDING MODE INPUT
Y IN	: REC Y INPUT
Y VOL	: REC Y GAIN CONTROL

OUTPUT

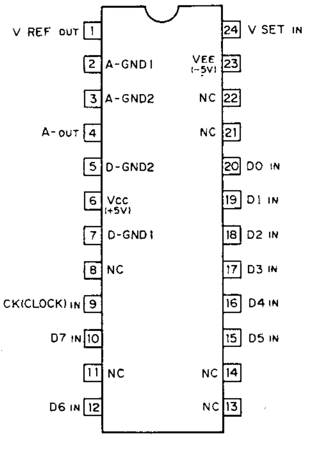
BT	: BIAS TRAP FILTER
CH-1 OUT	: REC CH-1 OUTPUT
CH-1 DTF OUT	: DTF CH-1 OUTPUT
CH-1 H AMP OUT	: CH-1 HEAD AMP OUTPUT
CH-1 REC OUT	: CH-1 REC AMP OUTPUT
CH-2 OUT	: REC CH-2 OUTPUT
CH-2 DTF OUT	: DTF CH-2 OUTPUT
CH-2 H AMP OUT	: CH-2 HEAD AMP OUTPUT
CH-2 REC OUT	: CH-2 REC AMP OUTPUT
RF OUT 1	: RF OUTPUT FOR VIDEO
RF OUT 2	: RF OUTPUT FOR PCM
RF OUT 3	: RF OUTPUT

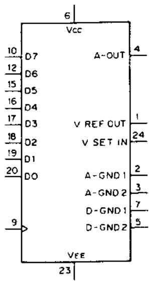
OTHERS

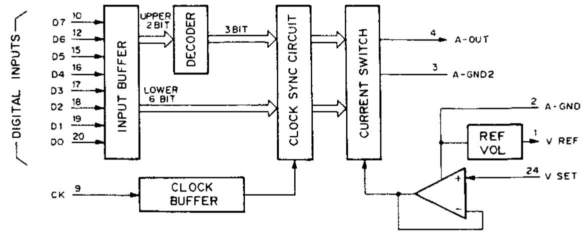
CH-1 LPC	: BYPASS CAPACITOR FOR CH-1 HEAD AMP
CH-1 PC1	: BYPASS CAPACITOR FOR CH-1 HEAD AMP
CH-1 Z	: LCR RESONANCE CIRCUIT
CH-2 LPC	: BYPASS CAPACITOR FOR CH-2 2nd RF AMP
CH-2 PC1	: BYPASS CAPACITOR FOR CH-2 HEAD AMP
CH-2 Z	: LCR RESONANCE CIRCUIT
PC 2	: BYPASS CAPACITOR
PC 3	: BYPASS CAPACITOR FOR ATTENUATER


28 HEAD AMP Vcc
33 REC AMP Vcc
11 PB Vcc
45 REC Vcc
CH-2 PB IN 35
CH-2 PC1 34
CH-2 HEAD AMP
C/D
CH-2 LPC 41
CH-2 Z 42
PC 2 20
REF
CH-1 Z 18
CH-1 LPC 17
2nd RF AMP
2nd RF AMP
C/D
CH-1 PC1 27
CH-1 PB IN 26
CH-1 HEAD AMP
BUFF
6dB ATTENNATOR
32 CH-2 HAMPOUT
29 CH-1 HAMPOUT
15 CH-2 DTF OUT
16 CH-1 DTF OUT
5 RF OUT2
8 RF OUT3
10 RF IN
9 PC3
12 RF OUT1
13 BT
Y IN 1
Y VOL 21
C IN 3
C VOL 44
PCM IN 46
PCM VOL 22
ATF IN 40
ATF VOL 39
CH-2 REC IN 38
CH-1 REC IN 23
Y VOL
C VOL
PCM VOL
ATF VOL
37 CH-2 SIGNAL OUT
24 CH-1 SIGNAL OUT
CH2 REC AMP
CH1 REC AMP
36 CH-2 REC OUT
25 CH-1 REC OUT
V REC 48
V ABP 47
RF SWP 2
PB 5V 4
PCM REC 6
ACK JOG IN 7
AF REC 14
CONTROL LOGIC
HEAD AMP GND 30
REC AMP GND 31
PB GND 19
REC GND 43

CXA1106M (SONY) FLAT PACKAGE
8-BIT D/A CONVERTER (TTL INPUT)
– TOP VIEW –


1 V REF OUT
2 A-GND1
3 A-GND2
4 A-OUT
5 D-GND2
6 Vcc (+5V)
7 D-GND1
8 NC
9 CK(CLOCK) IN
10 D7 IN
11 NC
12 D6 IN
13 NC
14 NC
15 D5 IN
16 D4 IN
17 D3 IN
18 D2 IN
19 D1 IN
20 D0 IN
21 NC
22 NC
23 VEE (-5V)
24 V SET IN

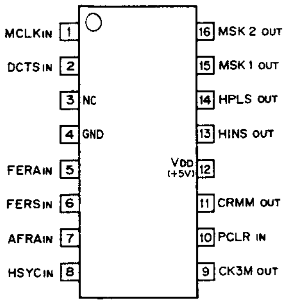

6 Vcc
10 D7
12 D6
15 D5
16 D4
17 D3
18 D2
19 D1
20 D0
9
A-OUT 4
V REF OUT 1
V SET IN 24
A-GND1 2
A-GND2 3
D-GND1 7
D-GND2 5
VEE 23

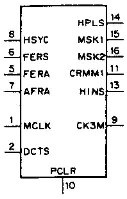

DIGITAL INPUTS
D7 10
D6 12
D5 15
D4 16
D3 17
D2 18
D1 19
D0 20
INPUT BUFFER
UPPER 2BIT
DECODER
3BIT
LOWER 6 BIT
CLOCK SYNC CIRCUIT
CURRENT SWITCH
CK 9
CLOCK BUFFER
4 A-OUT
3 A-GND2
2 A-GND1
REF VOL
1 V REF
24 V SET

CXD1051M (SONY) FLAT PACKAGE

C-MOS VIDEO PULSE GENERATOR

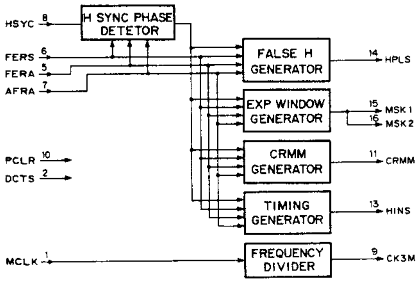
– TOP VIEW –


MCLK IN 1
DCTS IN 2
3 NC
4 GND
FERA IN 5
FERS IN 6
AFRA IN 7
HSYC IN 8
16 MSK 2 OUT
15 MSK 1 OUT
14 HPLS OUT
13 HINS OUT
VDD (+5V) 12
11 CRMM OUT
10 PCLR IN
9 CK3M OUT


8 HSYC
6 FERS
5 FERA
7 AFRA
1 MCLK
2 DCTS
HPLS 14
MSK1 15
MSK2 16
CRMM1 11
HINS 13
CK3M 9
PCLR
10

INPUT
AFRA : AFTER REC MASK AREA INPUT
DCTS : TEST PIN
FERA : FLYING ERASE MASK AREA INPUT
FERS : FLYING ERASE RUN AREA INPUT
HSYC : HORIZONTAL SYNC INPUT
MCLK : CLOCK INPUT
PCLR : POWER ON/CLEAR INPUT

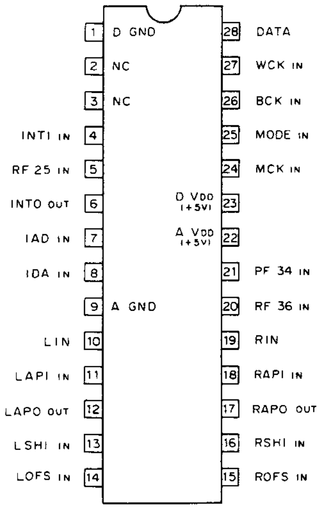
OUTPUT
CK3M : MCLK/4 CLOCK OUTPUT
CRMM : CHROMA MUTE OUTPUT
HINS : FALSE HD TIMING OUTPUT
HPLS : FALSE HD PULSE OUTPUT
MSK1 – MSK2 : VIDEO MASKING OUTPUTS

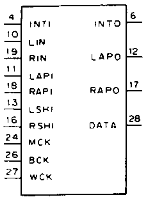

HSYC 8
H SYNC PHASE DETETOR
FERS 6
FERA 5
AFRA 7
FALSE H GENERATOR
14 HPLS
EXP WINDOW GENERATOR
15 MSK 1
16 MSK 2
PCLR 10
DCTS 2
CRMM GENERATOR
11 CRMM
TIMING GENERATOR
13 HINS
MCLK 1
FREQUENCY DIVIDER
9 CK3M

CXD1077M (SONY) MINI FLAT PACKAGE

C-MOS A/D, D/A CONVERTER FOR PCM AUDIO

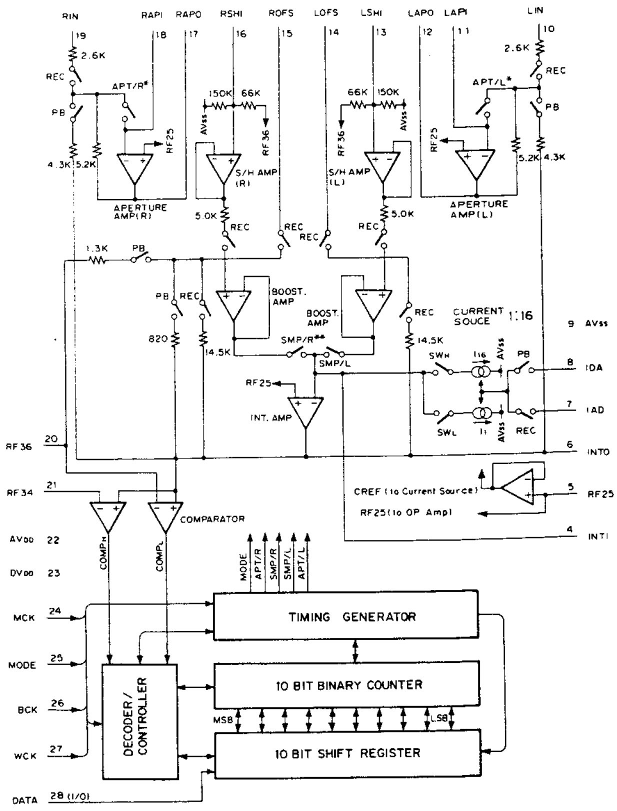
— TOP VIEW —


1 D GND
2 NC
3 NC
INTI IN 4
RF 25 IN 5
INTO OUT 6
IAD IN 7
IDA IN 8
9 A GND
L IN 10
LAPI IN 11
LAPO OUT 12
LSHI IN 13
LOFS IN 14
28 DATA
27 WCK IN
26 BCK IN
25 MODE IN
24 MCK IN
D VDD (+5V) 23
A VDD (+5V) 22
21 PF 34 IN
20 RF 36 IN
19 RIN
18 RAPI IN
17 RAPO OUT
16 RSHI IN
15 ROFS IN

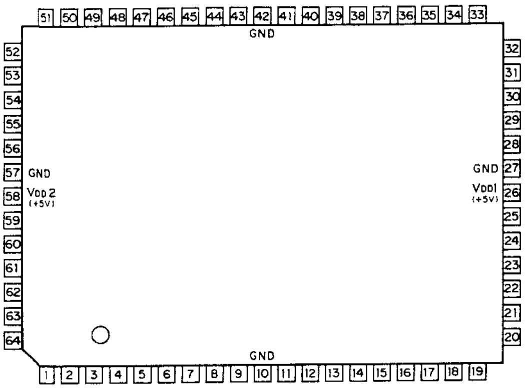

4 INTI
10 LIN
19 RIN
11 LAPI
18 RAPI
13 LSHI
16 RSHI
24 MCK
26 BCK
27 WCK
INTO 6
LAPO 12
RAPO 17
DATA 28

BCK ; BIT CLOCK INPUT TERMINAL
DATA ; DATA INPUT/OUTPUT TERMINAL
IAD ; INTEGRATION CURRENT SET UP TERMINAL (REC MODE)
IDA ; INTEGRATION CURRENT SET UP TERMINAL (PB MODE)
INTI ; INTEGRATION AMP INPUT TERMINAL
INTO ; INTEGRATION AMP OUTPUT TERMINAL
LAPI ; APERTURE AMP INPUT TERMINAL (L)
LAPO ; APERTURE AMP OUTPUT TERMINAL (L)
L IN ; ANALOG SIGNAL INPUT TERMINAL (L)
LOFS ; OFFSET CORRECT TERMINAL (L)
LSHI ; SAMPLE & HOLD AMP (L) INPUT TERMINAL
MCK ; MASTER CLOCK INPUT TERMINAL
MODE ; REC MODE/PB MODE SET UP TERMINAL
RAPO ; APERTURE AMP OUTPUT TERMINAL (R)
RAPI ; APERTURE AMP INPUT TERMINAL (R)
R IN ; ANALOG SIGNAL INPUT TERMINAL (R)
RF25 ; IMAGINE CONTACT ELECTORIC POTENTIAL SET UP TERMINAL
RF34 ; HIGHER RANK VOLTAGE SET UP TERMINAL
RF36 ; (REC) LOW RANK COMPARATOR VOLTAGE OR
(PB) DISCHARGE VOLTAGE SET UP TERMINAL
ROFS ; OFFSET CORRECT TERMINAL (R)
RSHI ; SAMPLE & HOLD AMP (R) INPUT TERMINAL
WCK ; WORD CLOCK INPUT TERMINAL

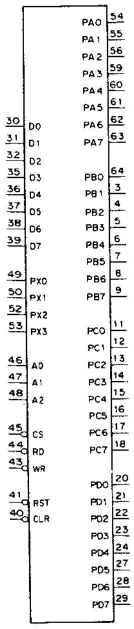
	(REC MODE)	(PB MODE)
* APT/L,R	EVER ON	APERTURE
** SMP/R	SAMPLING	DISCHARGE


RIN 19
RAPI 18
RAPO 17
RSHI 16
ROFS 15
LOFS 14
LSHI 13
LAPO 12
LAPI 11
LIN 10
2.6K
REC
PB
APT/R*
APT/L*
4.3K
5.2K
150K
66K
AVss
RF 36
RF 25
S/H AMP (R)
S/H AMP (L)
APERTURE AMP(R)
APERTURE AMP(L)
5.0K
1.3K
BOOST. AMP
CURRENT SOUCE 1:16
820
14.5K
SMP/R**
SMP/L
RF25
INT. AMP
SWH
SWL
9 AVss
8 IDA
7 IAD
6 INTO
RF 36 20
RF 34 21
CREF (Io Current Source)
RF25 (Io OP Amp)
5 RF25
4 INTI
COMPARATOR
COMPH
COMPL
AVDD 22
DVDD 23
MODE
APT/R
SMP/R
SMP/L
APT/L
MCK 24
MODE 25
BCK 26
WCK 27
DATA 28 (I/O)
TIMING GENERATOR
DECODER/CONTROLLER
10 BIT BINARY COUNTER
MSB
LSB
10 BIT SHIFT REGISTER

CXD1095Q (SONY) FLAT PACKAGE
C-MOS I/O PORT EXPANDER
— TOP VIEW —


GND
GND
VDD 2 (+5V)
GND
VDD1 (+5V)
GND

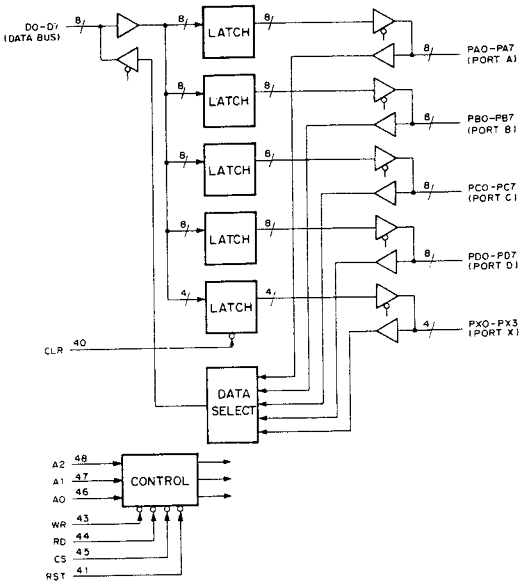
PIN NO.	IN	OUT	SYMBOL	PIN NO.	IN	OUT	SYMBOL	PIN NO.	IN	OUT	SYMBOL	PIN NO.	IN	OUT	SYMBOL
1			NC	17	O	O	PC6	33			NC	49	O	O	PX0
2			NC	18	O	O	PC7	34			NC	50	O	O	PX1
3	O	O	PB1	19			NC	35	O	O	D3	51			NC
4	O	O	PB2	20	O	O	PD0	36	O	O	D4	52	O	O	PX2
5	O	O	PB3	21	O	O	PD1	37	O	O	D5	53	O	O	PX3
6	O	O	PB4	22	O	O	PD2	38	O	O	D6	54	O	O	PA0
7	O	O	PB5	23	O	O	PD3	39	O	O	D7	55	O	O	PA1
8	O	O	PB6	24	O	O	PD4	40	O		CLR	56	O	O	PA2
9	O	O	PB7	25			GND	41	O		RST	57			GND
10			GND	26	O		VDD (+5V)	42			GND	58	O		VDD (+5V)
11	O	O	PC0	27	O	O	PD5	43	O		WR	59	O	O	PA3
12	O	O	PC1	28	O	O	PD6	44	O		RD	60	O	O	PA4
13	O	O	PC2	29	O	O	PD7	45	O		CS	61	O	O	PA5
14	O	O	PC3	30	O	O	D0	46	O		A0	62	O	O	PA6
15	O	O	PC4	31	O	O	D1	47	O		A1	63	O	O	PA7
16	O	O	PC5	32	O	O	D2	48	O		A2	64	O	O	PB0


PA0 54
PA1 55
PA2 56
PA3 59
PA4 60
PA5 61
PA6 62
PA7 63
PB0 64
PB1 3
PB2 4
PB3 5
PB4 6
PB5 7
PB6 8
PB7 9
PC0 11
PC1 12
PC2 13
PC3 14
PC4 15
PC5 16
PC6 17
PC7 18
PD0 20
PD1 21
PD2 22
PD3 23
PD4 24
PD5 27
PD6 28
PD7 29
30 D0
31 D1
32 D2
35 D3
36 D4
37 D5
38 D6
39 D7
49 PX0
50 PX1
52 PX2
53 PX3
46 A0
47 A1
48 A2
45 CS
44 RD
43 WR
41 RST
40 CLR

CS	RD	WR	A2	A1	A0	MODE
0	0	1	0	0	0	PORT A → DATA BUS
0	0	1	0	0	1	PORT B → DATA BUS
0	0	1	0	1	0	PORT C → DATA BUS
0	0	1	0	1	1	PORT D → DATA BUS
0	0	1	1	0	0	PORT X → DATA BUS
0	0	1	1	0	1	—
0	0	1	1	1	0	—
0	0	1	1	1	1	—
0	1	0	0	0	0	DATA BUS → PORT A
0	1	0	0	0	1	DATA BUS → PORT B
0	1	0	0	1	0	DATA BUS → PORT C
0	1	0	0	1	1	DATA BUS → PORT D
0	1	0	1	0	0	DATA BUS → PORT X
0	1	0	1	0	1	—
0	1	0	1	1	0	DATA BUS → CTL REG.1
0	1	0	1	1	1	DATA BUS → CTL REG.2
1	X	X	X	X	X	DATA BUS ; HI-Z

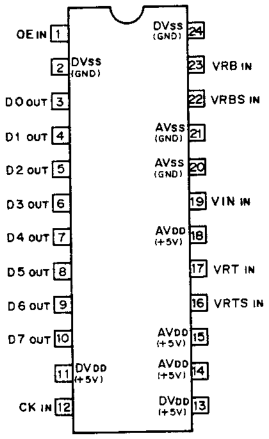
0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE
HI-Z, HIGH IMPEDANCE

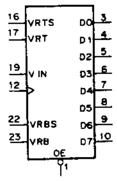
D0-D7 ; DATA BUS INPUTS/OUTPUTS
CS ; CHIP SELECT INPUT
RD ; READ STROBE INPUT
WR ; WRITE STROBE INPUT
A0-A2 ; ADDRESS INPUT
RST ; RESET INPUT
CLR ; CLEAR INPUT
PA0-PA7 ; PORT A INPUTS/OUTPUTS
PB0-PB7 ; PORT B INPUTS/OUTPUTS
PC0-PC7 ; PORT C INPUTS/OUTPUTS
PD0-PD7 ; PORT D INPUTS/OUTPUTS
PX0-PX3 ; PORT X INPUTS/OUTPUTS


D0-D7 (DATA BUS)
8
LATCH
LATCH
LATCH
LATCH
LATCH
8
4
PA0-PA7 (PORT A)
PB0-PB7 (PORT B)
PC0-PC7 (PORT C)
PD0-PD7 (PORT D)
PX0-PX3 (PORT X)
CLR 40
DATA SELECT
A2 48
A1 47
A0 46
CONTROL
WR 43
RD 44
CS 45
RST 41

CXD1175M (SONY) FLAT PACKAGE

C-MOS 8-BIT 20MSPS VIDEO A/D CONVERTER
– TOP VIEW –

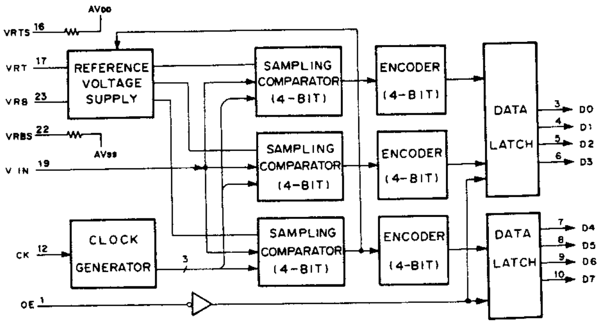

OE IN 1
DVSS (GND) 2
D0 OUT 3
D1 OUT 4
D2 OUT 5
D3 OUT 6
D4 OUT 7
D5 OUT 8
D6 OUT 9
D7 OUT 10
DVDD (+5V) 11
CK IN 12
DVDD (+5V) 13
AVDD (+5V) 14
AVDD (+5V) 15
16 VRTS IN
17 VRT IN
18 AVDD (+5V)
19 VIN IN
20 AVSS (GND)
21 AVSS (GND)
22 VRBS IN
23 VRB IN
24 DVSS (GND)


16 VRTS
17 VRT
19 V IN
12
22 VRBS
23 VRB
D0 3
D1 4
D2 5
D3 6
D4 7
D5 8
D6 9
D7 10
OE 1

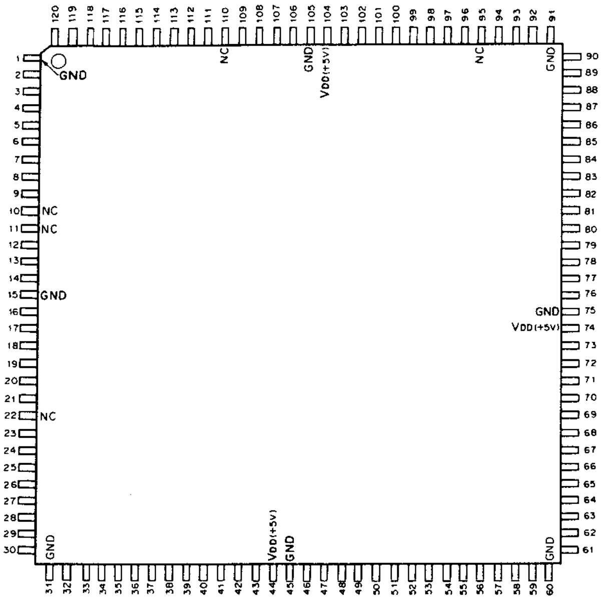
AV_{DD} : ANALOG POWER SUPPLY
AV_{SS} : ANALOG GROUND
CK : CLOCK INPUT
D0 – 7 : DIGITAL DATA OUTPUTS (LSB to MSB)
DV_{DD} : DIGITAL POWER SUPPLY
DV_{SS} : DIGITAL GROUND
OE : OUTPUT ENABLE (OE = HIGH : HIGH IMPEDANCE)
VIN : ANALOG VOLTAGE INPUT
VRB : BOTTOM REFERENCE VOLTAGE INPUT
VRBS : AS SHORT-CIRCUIT AT VRB. GENERATES + 0.6V
VRT : TOP REFERENCE VOLTAGE INPUT
VRTS : AS SHORT-CIRCUIT AT VRT. GENERATES + 2.6V

STEP	INPUT SIGNAL VOLTAGE	DATA OUTPUTS							
		D7	D6	D5	D4	D3	D2	D1	D0
0	0V (VRT)	1	1	1	1	1	1	1	1
1	0.01V	1	1	1	1	1	1	1	0
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
127	1.34V	1	0	0	0	0	0	0	0
128	1.35V	0	1	1	1	1	1	1	1
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
255	2.7V (VRB)	0	0	0	0	0	0	0	0

0 : LOW LEVEL
1 : HIGH LEVEL


AVDD
VRTS 16
VRT 17
VRB 23
VRBS 22
AVSS
V IN 19
CK 12
OE 1
REFERENCE VOLTAGE SUPPLY
SAMPLING COMPARATOR (4-BIT)
SAMPLING COMPARATOR (4-BIT)
SAMPLING COMPARATOR (4-BIT)
ENCODER (4-BIT)
ENCODER (4-BIT)
ENCODER (4-BIT)
CLOCK GENERATOR
3
DATA LATCH
DATA LATCH
3 D0
4 D1
5 D2
6 D3
7 D4
8 D5
9 D6
10 D7

CXD1226Q (SONY) FLAT PACKAGE
C-MOS DIGITAL CHROMA DECODER/Y, C FIELD NOISE REDUCER
– TOP VIEW –


GND
NC
NC
GND
NC
GND
VDD(+5V)
NC
GND
GND
VDD(+5V)
GND
VDD(+5V)
GND
GND

PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1	–	GND	31	–	GND	61	–	GND	91	–	GND
2	I	CSR0	32	I	CMCK	62	O	MPL	92	I	YMCK
3	I	CSR1	33	I	DOP	63	O	LIMO	93	I	PINV
4	I	CSR2	34	I	USC0	64	I	SW1	94	I	NRFD
5	I	CSR3	35	I	JPI0	65	I	MTST	95	–	NC
6	O	CMW0	36	I	JPI1	66	O	FSC	96	I	AHD
7	O	CMW1	37	I	YSYS	67	I	INFS	97	I	CHD
8	O	CMW2	38	I	PHEN	68	I	MPXT	98	I	YHD
9	O	CMW3	39	I	PD	69	I	MMTC	99	I	WEVN
10	–	NC	40	O	PED0	70	I	EXFS	100	I	OFSB
11	–	NC	41	O	PED1	71	I	CS0	101	I	SADM
12	I	YSR0	42	O	PED2	72	I	CS1	102	I	CLR
13	I	YSR1	43	O	PED3	73	I	WY7	103	O	CMPT
14	–	VDD (+5V)	44	–	VDD (+5V)	74	–	VDD (+5V)	104	–	VDD (+5V)
15	–	GND	45	–	GND	75	–	GND	105	–	GND
16	I	YSR2	46	O	COCK	76	I	WY6	106	O	RBT
17	I	YSR3	47	O	VCOO	77	I	WY5	107	O	ACK
18	O	YMW0	48	I	VCOI	78	I	WY4	108	I	YDLY
19	O	YMW1	49	O	OUT0	79	I	WY3	109	I	CTH
20	O	YMW2	50	I	IM0	80	I	WY2	110	–	NC
21	O	YMW3	51	O	OUT1	81	I	WY1	111	I	FNR
22	–	NC	52	I	IM1	82	I	WY0	112	I	WVMT
23	I	YSR4	53	–	AG	83	I	WCY7	113	I	WCDT
24	I	YSR5	54	O	OUT2	84	I	WCY6	114	I	WUV0
25	I	YSR6	55	I	IM2	85	I	WCY5	115	I	WUV1
26	I	YSR7	56	I	LIMI	86	I	WCY4	116	I	YEV0
27	O	YMW4	57	O	BPE0	87	I	WCY3	117	I	YEV1
28	O	YMW5	58	O	BPE1	88	I	WCY2	118	I	YEV2
29	O	YMW6	59	O	BPE2	89	I	WCY1	119	I	CEV0
30	O	YMW7	60	O	BPE3	90	I	WCY0	120	I	CEV1

∗1 CHROMA SYSTEM MODE SELECTION

CS1	CS0	MODE
0	0	NTSC
0	1	PAL
1	0	CHROMA BASE BAND INPUT
1	1	PROHIBITION

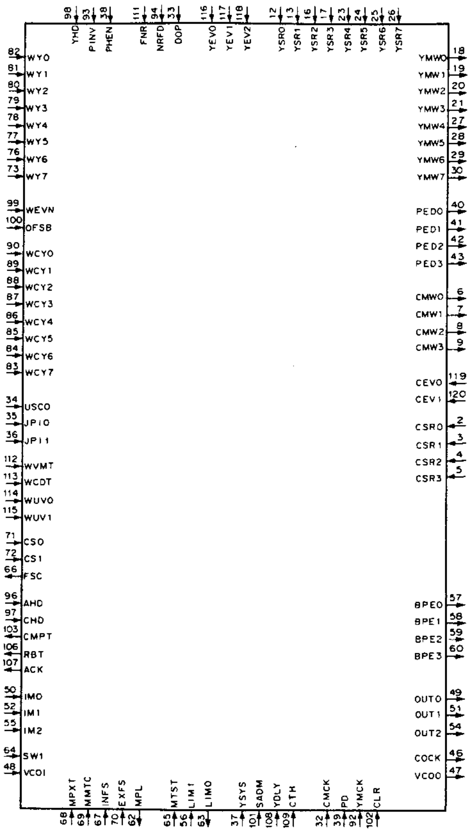
∗3 CHROMA SIGNAL NOISE REDUCER SELECTION

CEV0	CEV1	OPERATION
0	0	NOISE REDUCER (SOFT)
0	1	NOISE REDUCER (MIDDLE)
1	0	NOISE REDUCER (STRONG)
1	1	NO OPERATION

0 : LOW LEVEL
1 : HIGH LEVEL

∗2 Y SIGNAL NOISE REDUCER SELECTION

YEV0	YEV1	YEV2	OPERATION
0	0	0	NOISE REDUCER (SOFT)
0	0	1	NOISE REDUCER (MIDDLE)
0	1	0	NOISE REDUCER (STRONG)
0	1	1	AFTER IMAGE
1	0	0	VERTICAL FILTER
1	0	1	FADE IN/OUT
1	1	0	SELECT AFTER IMAGE
1	1	1	NO OPERATION

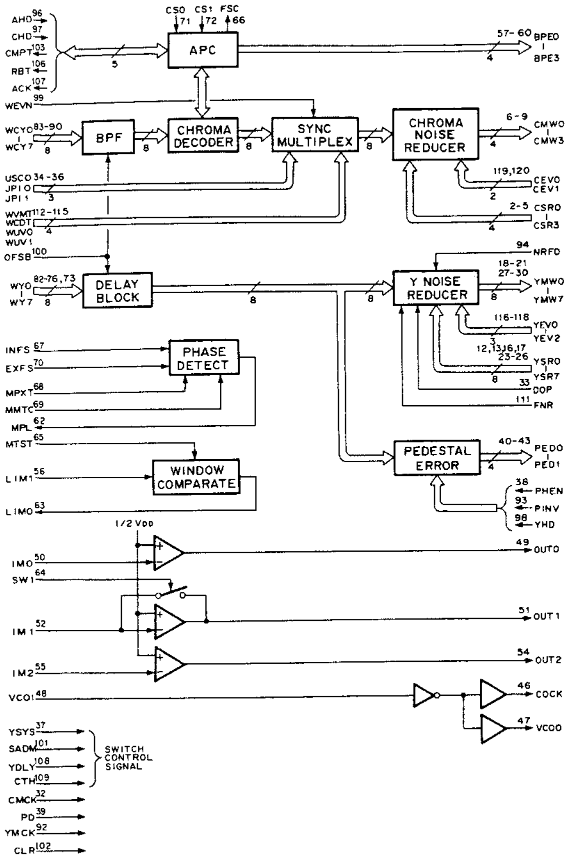

YHD
PINV
PHEN
FNR
NRFD
DOP
YEV0
YEV1
YEV2
YSR0
YSR1
YSR2
YSR3
YSR4
YSR5
YSR6
YSR7
WY0
WY1
WY2
WY3
WY4
WY5
WY6
WY7
WEVN
OFSB
WCY0
WCY1
WCY2
WCY3
WCY4
WCY5
WCY6
WCY7
USC0
JPI0
JPI1
WVMT
WCDT
WUV0
WUV1
CS0
CS1
FSC
AHD
CHD
CMPT
RBT
ACK
IM0
IM1
IM2
SW1
VCOI
YMW0
YMW1
YMW2
YMW3
YMW4
YMW5
YMW6
YMW7
PED0
PED1
PED2
PED3
CMW0
CMW1
CMW2
CMW3
CEV0
CEV1
CSR0
CSR1
CSR2
CSR3
BPE0
BPE1
BPE2
BPE3
OUT0
OUT1
OUT2
COCK
VCOO
MPXT
MMTC
INFS
EXFS
MPL
MTST
LIM1
LIMO
YSYS
SADM
YDLY
CTH
CMCK
PD
YMCK
CLR

INPUT

AG : ANALOG GND
AHD : H SYNC INPUT FOR APC
∗3 CEV0, 1 : C NOISE REDUCER MODE SELECT INPUTS
CHD : H SYNC INPUT FOR BURST DETECT
CLR : DIRECT CLEAR INPUT
CMCK : CLOCK INPUT FOR CHROMA SYSTEM
CSR0 – CSR3 : CHROMA READ DATA INPUTS
∗1 CS0, 1 : CHROMA SYSTEM SELECT INPUTS
CTH : CHROMA TEST TERMINAL
DOP : DROPOUT CONPENSATION PULSE INPUT
EXFS : EXTERNAL Fsc INPUT
FNR : NOISE REDUCER ON/OFF CNTROL INPUT
IM0 – IM2 : AUDIO RANGE AMP INPUTS
INFS : INTERNAL Fsc INPUT
JPI0, 1 : ID CODE MONITOR INPUTS (D2, D3)
LIMI : WINDOW COMPARATOR INPUT
MMTC, MPXT, MTST, PD
: TEST PIN
NRFD : Y FIELD NOISE REDUCER DATA INPUT
OFSB : OFF SET BINARY MODE INPUT
PHEN : CHROMA APC SYSTEM CONTROL INPUT
PINV : PEDESTAL CLAMP ERROR INVERT INPUT
SADM : Y/C SIGNAL, H : COMPOSITE SIGNAL SELECT INPUT
SW1 : AUDIO RANGE SWITCH INPUT
USC0 : USER CODE FOR OPTION
VCOI : VCO INPUT
WCDT : WRITE FRAMING CODE TIMING INPUT
WCY0 – WCY7 : L CHROMA SIGNAL, H : COMPOSITE SIGNAL INPUTS
WEVN : WRITE EVEN/ODD FIELD MONITOR INPUT
WUV0, 1 : WRITE U/V TIMING INPUTS
MVMT : WRITE VIDEO MUTE
WY0 – WY7 : WRITE Y SIGNAL INPUTS
YDLY : Y DELAY ADJUST INPUT
∗2 YEV0 – YEV2 : Y NOISE REDUCER MODE SELECT INPUTS
YHD : Y H DRIVE PULSE INPUT
YMCK : Y MEMORY CONTROL CLOCK INPUT
YSR0 – YSR7 : Y MEMORY DATA INPUTS
YSYS : Y DELAY ADJUST INPUT
(H : 3.58MHz C SYSTEM, L : 4.43MHz C SYSTEM)

OUTPUT

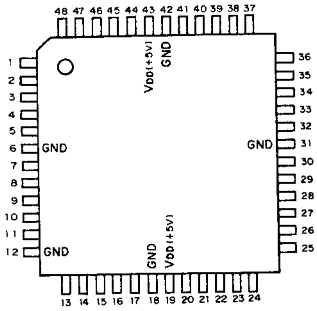
ACK : CLOCK OUTPUT FOR APC
(H : B/W MODE, L : COLOR MODE)
BPE0 – BPE3 : PHASE ERROR OUTPUTS FOR APC
(OFFSET BINARY OUTPUTS)
CMPT : MONITOR TERMINAL FOR TEST
CMW0 – CMW3 : CHROMA WRITE DATA OUTPUTS
COCK : VCO OUT CLOCK OUTPUT
FSC : 1/4 CLOCK OUTPUT
LIMO : WINDOW COMPARATOR OUTPUT
MPL : PHASE COMPARATOR ERROR OUTPUT
OUT0 – OUT2 : AUDIO RANGE AMP OUTPUTS
PED0 – PED3 : PEDESTAL CLAMP ERROR OUTPUTS
RBT : MONITOR PIN FOR TEST
VCOO : VCO OUTPUT
YMW0 – YMW7 : Y MEMORY DATA OUTPUTS


AHD 96
CHD 97
CMPT 103
RBT 106
ACK 107
WEVN 99
CS0 71
CS1 72
FSC 66
APC
5
4
57-60 BPE0 ~ BPE3
WCY0 83-90 WCY7
8
BPF
CHROMA DECODER
SYNC MULTIPLEX
CHROMA NOISE REDUCER
6-9 CMW0 ~ CMW3
119,120 CEV0 ~ CEV1
2-5 CSR0 ~ CSR3
USC0 34-36
JPI0
JPI1
3
WVMT 112-115
WCDT
WUV0
WUV1
OFSB 100
94 NRFD
WY0 82-76,73 WY7
DELAY BLOCK
Y NOISE REDUCER
18-21 27-30 YMW0 ~ YMW7
116-118 YEV0 ~ YEV2
12,13,16,17 23-26 YSR0 ~ YSR7
33 DOP
111 FNR
INFS 67
EXFS 70
PHASE DETECT
MPXT 68
MMTC 69
MPL 62
MTST 65
WINDOW COMPARATE
LIM1 56
LIMO 63
PEDESTAL ERROR
40-43 PED0 ~ PED1
38 PHEN
93 PINV
98 YHD
1/2 VDD
IMO 50
SW1 64
49 OUTO
IM1 52
51 OUT1
IM2 55
54 OUT2
VCO1 48
46 COCK
47 VCOO
YSYS 37
SADM 101
YDLY 108
CTH 109
SWITCH CONTROL SIGNAL
CMCK 32
PD 39
YMCK 92
CLR 102

CXD1229Q (SONY) FLAT PACKAGE

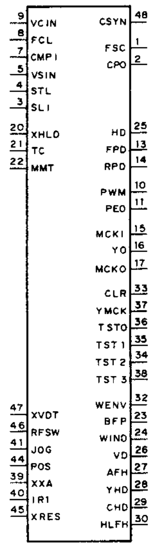
C-MOS AUTOMATIC FREQUENCY CONTROL (AFC) /SYNC SEPARATOR

– TOP VIEW –


48 47 46 45 44 43 42 41 40 39 38 37
1
2
3
4
5
6 GND
7
8
9
10
11
12 GND
VDD(+5V)
GND
GND
GND
VDD(+5V)
36
35
34
33
32
31
30
29
28
27
26
25
13 14 15 16 17 18 19 20 21 22 23 24

PIN ASSIGNMENT (V_{DD} = + 5V)

PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1	I/O	FCS	13	O	FPD	25	O	HD	37	I	YMCK
2	I/O	CPO	14	O	RPD	26	O	VD	38	O	TST3
3	I	SLI	15	I	MCKI	27	O	AFH	39	I/O	XXA
4	I	STL	16	O	YO	28	O	YHD	40	I/O	IR1
5	I	VSIN	17	O	MCKO	29	O	CHD	41	I	JOG
6	–	GND	18	–	GND	30	O	HLFH	42	–	GND
7	I	CMPI	19	–	V_{DD}	31	–	GND	43	–	V_{DD}
8	I	FCL	20	I	XHLD	32	O	WEVN	44	I	POS
9	I	VCIN	21	O	TC	33	I	CLR	45	O	XRES
10	I	PWM	22	I	MMT	34	I	TST2	46	I	RFSW
11	O	PEO	23	O	BFP	35	I	TST1	47	I	XVDT
12	–	GND	24	O	WIND	36	I	TST0	48	O	CSYN


9 VCIN
8 FCL
7 CMPI
5 VSIN
4 STL
3 SLI
20 XHLD
21 TC
22 MMT
47 XVDT
46 RFSW
41 JOG
44 POS
39 XXA
40 IR1
45 XRES
CSYN 48
FSC 1
CPO 2
HD 25
FPD 13
RPD 14
PWM 10
PEO 11
MCKI 15
YO 16
MCKO 17
CLR 33
YMCK 37
TST0 36
TST1 35
TST2 34
TST3 38
WENV 32
BFP 23
WIND 24
VD 26
AFH 27
YHD 28
CHD 29
HLFH 30

INPUT

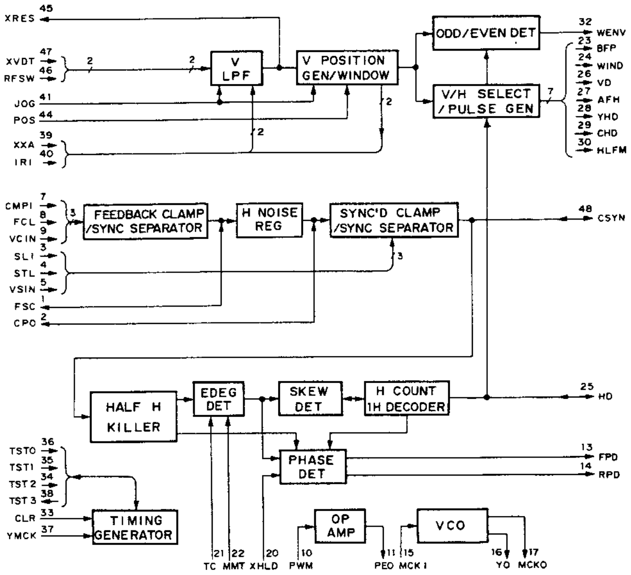
CLR	: DIRECT CLEAR INPUT
CMPI	: FEED BACK CLAMP SLICE LEVEL INPUT
FCL	: FEED BACK CLAMP SYNC CHIP LEVEL INPUT
JOG	: REFERENCE CONTROL INPUT
MCKI	: CLOCK (VCO) INVERTER INPUT
MMT	: MONO MULTI TEST PIN (H : NORMAL) INPUT
POS	: PHASE REFERENCE SELECT
PWM	: OP AMP INPUT
RFSW	: RF SW PULSE INPUT
SLI	: SYNC CLAMP SLICE LEVEL INPUT
STL	: SYNC CLAMP SYNC CHIP LEVEL INPUT
TST0	: L : NORMAL/H : TEST MODE INPUT
TST1, 2	: AFC LOCK PHASE COARSE ADJUST INPUTS
VCIN	: FEED BACK CLAMP VIDEO INPUT
VSIN	: SYNC CLAMP VIDEO INPUT
XHLD	: H : AFC ERROR ACTIVE/L : AFC ERROR HOLD INPUT
XVDT	: V DETECT COMPOSITE SYNC INPUT
YMCK	: MASTER CLOCK INPUT

OUTPUT

AFH	: AFC H DRIVE OUTPUT
BFP	: BURST FLAG PULSE OUTPUT
CHD	: H SYNC OUTPUT FOR BURST DETECT
FPD	: AFC SUB LOOP PHASE ERROR OUTPUT
HLFH	: $1/2f_H$ (≒ 7.5 kHz) OUTPUT
MCKO	: CLOCK (VCO) INVERTER OUTPUT ($910f_H$)
PEO	: OP AMP OUTPUT
RPD	: AFC MAIN LOOP PHASE ERROR OUTPUT
TST3	: L : NORMAL, H : TEST MODE OUTPUT
VD	: VERTICAL SYNC DETECT OUTPUT
WEVN	: WRITE EVEN/ODD FIELD DETECT OUTPUT
WIND	: WINDOW COMPARATOR OUTPUT FOR V-PLL
XRES	: V DETECT LPF OUTPUT
YO	: CLOCK (VCO) INVERT OUTPUT
YHD	: PEDESTAL CLAMP TIMING OUTPUT

INPUT/OUTPUT

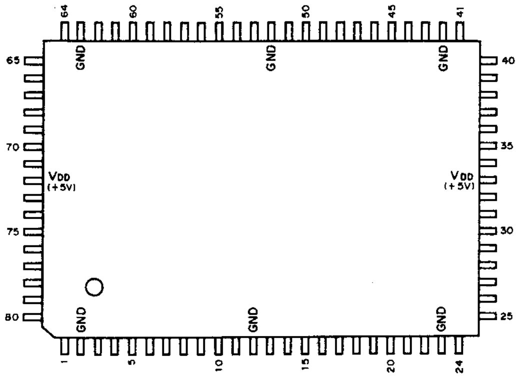
CPO	: CLAMP PULSE INPUT/OUTPUT
CSYN	: CLAMP SYNC SEPARATE INPUT/OUTPUT
FCS	: FEED BACK CLAMP SYNC SEPARATE INPUT/OUTPUT
HD	: AFC H DIRECT INPUT/OUTPUT
IR1	: MONITOR PIN FOR TEST INPUT/OUTPUT
TC	: AFC LOCK PHASE FINE ADJUST INPUT/OUTPUT
XXA	: MONITOR PIN FOR TEST INPUT/OUTPUT


XRES 45
XVDT 47
RFSW 46
2
V LPF
V POSITION GEN/WINDOW
ODD/EVEN DET
V/H SELECT /PULSE GEN
7
32 WENV
23 BFP
24 WIND
26 VD
27 AFH
28 YHD
29 CHD
30 HLFM
JOG 41
POS 44
XXA 39
IRI 40
CMPI 7
FCL 8
VCIN 9
FEEDBACK CLAMP /SYNC SEPARATOR
H NOISE REG
SYNC'D CLAMP /SYNC SEPARATOR
48 CSYN
SLI 3
STL 4
VSIN 5
FSC 1
CPO 2
HALF H KILLER
EDEG DET
SKEW DET
H COUNT 1H DECODER
25 HD
TST0 36
TST1 35
TST2 34
TST3 38
PHASE DET
13 FPD
14 RPD
CLR 33
YMCK 37
TIMING GENERATOR
OP AMP
VCO
21 TC
22 MMT
20 XHLD
10 PWM
11 PEO
15 MCKI
16 YO
17 MCKO

CXD1227Q (SONY)

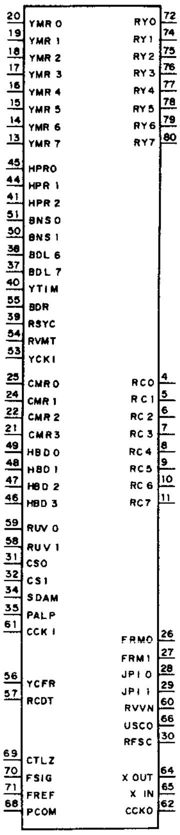
C-MOS DIGITAL CHROMA ENCODER/VERTICAL ENHANCER

– TOP VIEW –


64
60
55
50
45
41
65
40
70
35
75
30
80
25
1
5
10
15
20
24
GND
GND
GND
GND
GND
GND
VDD (+5V)
VDD (+5V)

PIN ASSIGNMENT (VDD = + 5V)

PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1	O	TST0	21	I	CMR3	41	I	HPR2	61	I	CCKI
2	–	GND	22	I	CMR2	42	–	GND	62	O	CCKO
3	O	TST1	23	–	GND	43	O	DOC	63	–	GND
4	O	RC0	24	I	CMR1	44	I	HPR1	64	O	XOUT
5	O	RC1	25	I	CMR0	45	I	HPR0	65	I	XIN
6	O	RC2	26	O	FRM0	46	I	HBD3	66	O	USCO
7	O	RC3	27	O	FRM1	47	I	HBD2	67	I	CLRI
8	O	RC4	28	O	JPI0	48	I	HBD1	68	O	PCOM
9	O	RC5	29	O	JPI1	49	I	HBD0	69	I	CTLZ
10	O	RC6	30	O	RFSC	50	I	BNS1	70	I	FSIG
11	O	RC7	31	I	CS0	51	I	BNS0	71	I	FREF
12	–	GND	32	I	CS1	52	–	GND	72	O	RY0
13	I	YMR7	33	–	VDD	53	I	YCKI	73	–	VDD
14	I	YMR6	34	I	SDAM	54	I	RVMT	74	O	RY1
15	I	YMR5	35	I	PALP	55	I	BDR	75	O	RY2
16	I	YMR4	36	I	OFSB	56	I	YCFR	76	O	RY3
17	I	YMR3	37	I	BDL7	57	I	RCDT	77	O	RY4
18	I	YMR2	38	I	BDL6	58	I	RUV1	78	O	RY5
19	I	YMR1	39	I	RSYC	59	I	RUV0	79	O	RY6
20	I	YMR0	40	I	YTIM	60	O	REVN	80	O	RY7


20 YMR 0
19 YMR 1
18 YMR 2
17 YMR 3
16 YMR 4
15 YMR 5
14 YMR 6
13 YMR 7
45 HPR 0
44 HPR 1
41 HPR 2
51 BNS 0
50 BNS 1
38 BDL 6
37 BDL 7
40 YTIM
55 BDR
39 RSYC
54 RVMT
53 YCKI
25 CMR 0
24 CMR 1
22 CMR 2
21 CMR 3
49 HBD 0
48 HBD 1
47 HBD 2
46 HBD 3
59 RUV 0
58 RUV 1
31 CS 0
32 CS 1
34 SDAM
35 PALP
61 CCK I
56 YCFR
57 RCDT
69 CTLZ
70 FSIG
71 FREF
68 PCOM
RY0 72
RY1 74
RY2 75
RY3 76
RY4 77
RY5 78
RY6 79
RY7 80
RC0 4
RC1 5
RC2 6
RC3 7
RC4 8
RC5 9
RC6 10
RC7 11
FRMO 26
FRM1 27
JPI 0 28
JPI 1 29
RVVN 60
USCO 66
RFSC 30
X OUT 64
X IN 65
CCKO 62

INPUT

BDR : BORDER TIMING INPUT
∗1 BDL6, 7 : Y BORDER LEVEL SELECT INPUTS
∗2 BNS0, 1 : SOLORIZATION RESOLUTION SELECT
CCKI : CHROMA CLOCK INPUT (4fsc)
CLRI : CLEAR INPUT
CMRO – 3 : CHROMA DATA INPUTS
∗3 CS0, 1 : CHROMA SYSTEM SELECT INPUTS
CTLZ : PHASE COMPARATOR OUT CONTROL INPUT
FREF : PHASE COMPARATOR REFERRENCE SIGNAL INPUT
FSIG : PHASE COMPARATOR SIGNAL INPUT
∗4 HBD0, 1 : U-AXIS BORDER LEVEL INPUTS
∗5 HBD2, 3 : V-AXIS BORDER LEVEL INPUTS
∗6 HPR0 – 2 : H PROCESS INPUTS
OFSB : OFF SET BINARY MODE INPUT
PALP : PAL PHASE CONTROL INPUT
RCDT : READ FRAMING CODE TIMING INPUT
RSYC : READ SYNC INPUT
RUV0 – 1 : READ U/V TIMING INPUTS
RVMT : READ VIDEO MUTE INPUT
SDAM : D/A MODE SELECT INPUT
XIN : CHROMA CLOCK INPUT FOR OSCILLATOR
YCKI : Y CLOCK INPUT (910f_H)
YCFR : Y/C FRAMING ON/OFF SELECT INPUT
YMR0 – 7 : Y DATA INPUTS
YTIM : Y TIMING CONTROL INPUT

OUTPUT

CCKO : CHROMA CLOCK OSCILLATOR OUTPUT (4fsc)
DOC : DROP OUT CONTROL MONITOR OUTPUT
FRM0, 1 : CHROMA FRAMING CODE OUTPUTS
JPI0, 1 : ID CODE MONITOR OUTPUTS (D2, D3)
PCOM : PHASE COMPARATOR OUTPUT
RC0 – 7 : READ CHROMA D/A OUTPUTS
REVN : READ EVEN/$\overline{\text{ODD}}$ FIELD MONITOR OUTPUT
RFSC : READ fsc OUTPUT
RY0 – 7 : READ Y D/A OUTPUTS
TST0, 1 : TEST TERMINALS
USCO : USER CODE FOR OPTION
XOUT : CHROMA CLOCK OUTPUT FOR OSCILLATOR

TABLE 1
∗1 BORDER LEVEL

BDL7	BDL6	LEVEL · ¹
0	0	8H (– 50IRE)
0	1	48H (– 100IRE)
1	0	C8H (CLAMP LEVEL)
1	1	C8H (0IRE)

TABLE 2
∗2 SOLORIZATION RESOLUTION

INPUTS		OUTPUTS				
BNS0	BNS1	RY0	RY1	RY2	RY3	RY4
0	0	0	0	1	X	X
0	1	0	0	0	1	X
1	0	0	0	0	0	1
1	1	X	X	X	X	X

TABLE 3
∗3 CHROMA SYSTEM MODE SELECTION

CS1	CS0	MODE
0	0	NTSC
0	1	PAL
1	0	CHROMA BASE BAND OUT
1	1	(PAL)

TABLE 4
∗4 U-AXIS BORDER LEVEL

HBD1	HBD0	LEVEL
0	0	20 IRE
0	1	– 20 IRE
1	0	– 30 IRE
1	1	0 IRE

TABLE 5
∗5 V-AXIS BORDER LEVEL

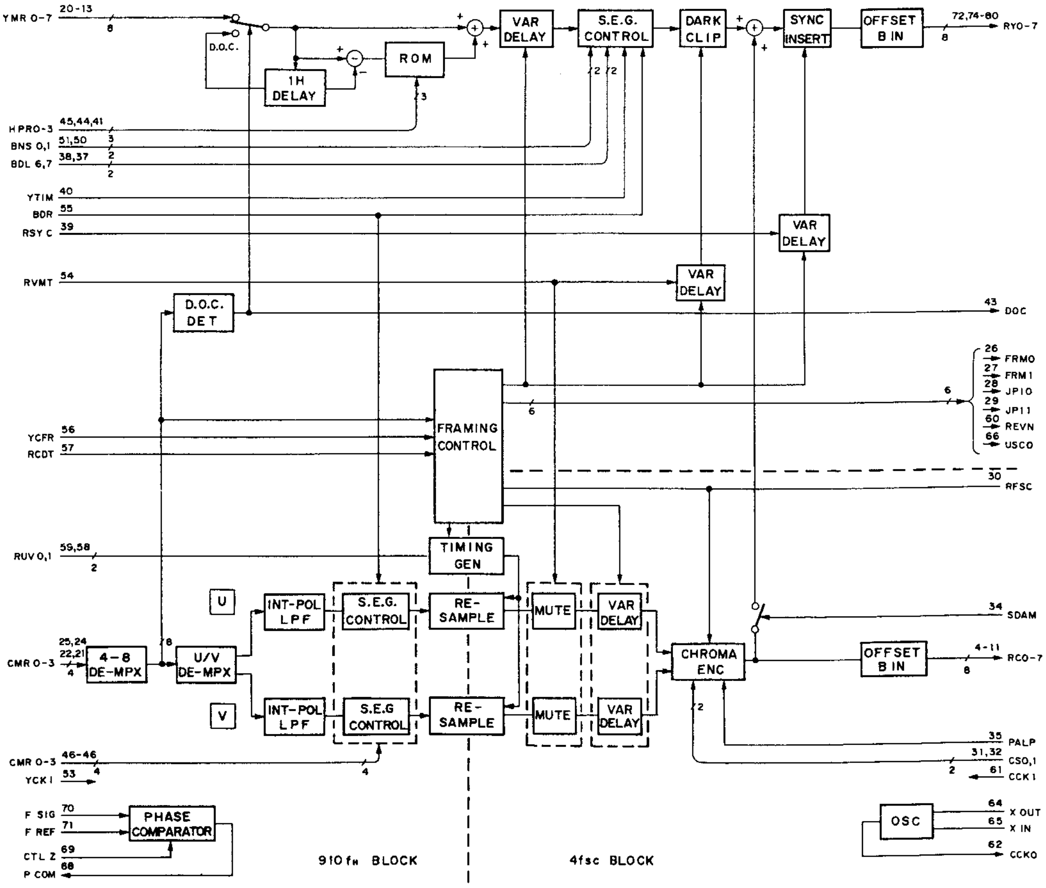
HBD3	HBD2	LEVEL
0	0	20 IRE
0	1	– 20 IRE
1	0	– 30 IRE
1	1	0 IRE

TABLE 6
∗6 H PROCESS MODE SELECTION

HPR2	HPR1	HPR0	OPERATION
0	0	0	V-ENHANCE (SOFT)
0	0	1	V-ENHANCE (SOFT)
0	1	0	V-ENHANCE (MIDDLE)
0	1	1	V-ENHANCE (STRONG)
1	0	0	MIX RATIO H_T:H_P=1:1
1	0	1	MIX RATIO H_T:H_P=1:3
1	1	0	MIX RATIO H_T:H_P=3:1
1	1	1	NO PLAY

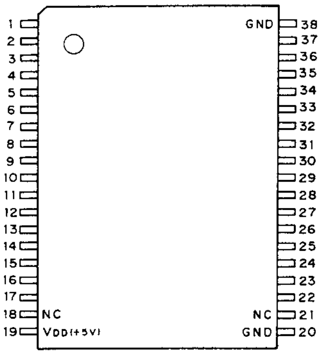
0 : LOW LEVEL
1 : HIGH LEVEL

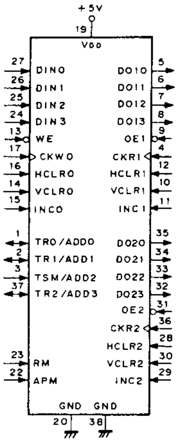
H_T = THROUGH
H_P = 1H DELAY

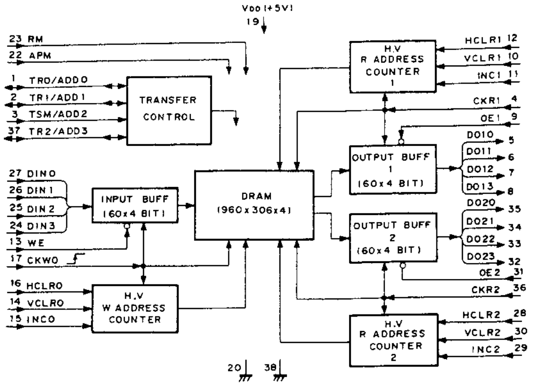

YMR 0-7
20-13
8
D.O.C.
1H DELAY
ROM
3
VAR DELAY
S.E.G. CONTROL
2
2
DARK CLIP
SYNC INSERT
OFFSET B IN
72,74-80
8
RY0-7
HPR0-3
45,44,41
3
BNS 0,1
51,50
2
BDL 6,7
38,37
2
YTIM
40
BDR
55
RSY C
39
VAR DELAY
RVMT
54
VAR DELAY
D.O.C. DET
43
DOC
FRAMING CONTROL
6
6
26 FRM0
27 FRM1
28 JPI0
29 JPI1
60 REVN
66 USCO
30 RFSC
YCFR
56
RCDT
57
TIMING GEN
RUV 0,1
59,58
2
U
V
CMR 0-3
25,24
22,21
4
4-8 DE-MPX
8
U/V DE-MPX
INT-POL LPF
S.E.G. CONTROL
RE-SAMPLE
MUTE
VAR DELAY
INT-POL LPF
S.E.G CONTROL
RE-SAMPLE
MUTE
VAR DELAY
CHROMA ENC
2
34
SDAM
OFFSET B IN
4-11
8
RC0-7
35 PALP
31,32
2
CS0,1
61
CCK1
CMR 0-3
46-46
4
4
YCK I
53
F SIG
70
F REF
71
PHASE COMPARATOR
CTL Z
69
P COM
68
910fH BLOCK
4fsc BLOCK
OSC
64 X OUT
65 X IN
62 CCKO

CXK1206M (SONY) FLAT PACKAGE

C-MOS VIDEO FIELD MEMORY (960-COLUMNx306-ROWx4-BIT)
– TOP VIEW –


GND
NC
VDD(+5V)
NC
GND


+5V
VDD
DIN0
DIN1
DIN2
DIN3
WE
CKW0
HCLR0
VCLR0
INC0
TR0/ADD0
TR1/ADD1
TSM/ADD2
TR2/ADD3
RM
APM
DO10
DO11
DO12
DO13
OE1
CKR1
HCLR1
VCLR1
INC1
DO20
DO21
DO22
DO23
OE2
CKR2
HCLR2
VCLR2
INC2
GND GND


VDD (+5V)
23 RM
22 APM
1 TR0/ADD0
2 TR1/ADD1
3 TSM/ADD2
37 TR2/ADD3
TRANSFER CONTROL
27 DIN0
26 DIN1
25 DIN2
24 DIN3
13 WE
17 CKW0
INPUT BUFF (60x4 BIT)
DRAM (960x306x4)
16 HCLR0
14 VCLR0
15 INC0
H.V W ADDRESS COUNTER
H.V R ADDRESS COUNTER 1
HCLR1 12
VCLR1 10
INC1 11
CKR1 4
OE1 9
OUTPUT BUFF 1 (60x4 BIT)
DO10 5
DO11 6
DO12 7
DO13 8
OUTPUT BUFF 2 (60x4 BIT)
DO20 35
DO21 34
DO22 33
DO23 32
OE2 31
CKR2 36
H.V R ADDRESS COUNTER 2
HCLR2 28
VCLR2 30
INC2 29
20
38

PIN	SIGNAL	DESCRIPTION
1	TR0/ADD0	W PORT 0 TRANSFER SYNC I/O, ADDRESS 0 INPUT
2	TR1/ADD1	R PORT 1 TRANSFER SYNC I/O, ADDRESS 1 INPUT
3	TSM/ADD2	TRANSFER SYNCHRONOUS MODE, ADDRESS 2 INPUT
4	CKR1	R PORT 1 SHIFT SIGNAL INPUT
5	DO10	R PORT 1 DATA 0 OUTPUT
6	DO11	R PORT 1 DATA 1 OUTPUT
7	DO12	R PORT 1 DATA 2 OUTPUT
8	DO13	R PORT 1 DATA 3 OUTPUT
9	OE1	R PORT 1 OUTPUT ENABLE INPUT
10	VCLR1	R PORT 1 VERTICAL CLEAR INPUT
11	INC1	R PORT 1 LINE INCREMENT INPUT
12	HCLR1	R PORT 1 HORIZONTAL CLEAR INPUT
13	WE	W PORT 0 WRITE ENABLE INPUT
14	VCLR0	W PORT 0 VERTICAL CLEAR INPUT
15	INC0	W PORT 0 LINE INCREMENT INPUT
16	HCLR0	W PORT 0 HORIZONTAL CLEAR INPUT
17	CKW0	W PORT 0 SHIFT SIGNAL INPUT
18	NC	(no connection)
19	VDD	+5V INPUT
20	GND	GND
21	NC	(no connection)
22	APM	ADDRESS PRESET MODE INPUT
23	RMM	RECURSIVE MODE ENABLE INPUT
24	DIN3	W PORT 0 DATA 3 INPUT
25	DIN2	W PORT 0 DATA 2 INPUT
26	DIN1	W PORT 0 DATA 1 INPUT
27	DIN0	W PORT 0 DATA 0 INPUT
28	HCLR2	R PORT 2 HORIZONTAL CLEAR INPUT
29	INC2	R PORT 2 LINE INCREMENT INPUT
30	VCLR2	R PORT 2 VERTICAL CLEAR INPUT
31	OE2	R PORT 2 OUTPUT ENABLE INPUT
32	DO23	R PORT 2 DATA 3 OUTPUT
33	DO22	R PORT 2 DATA 2 OUTPUT
34	DO21	R PORT 2 DATA 1 OUTPUT
35	DO20	R PORT 2 DATA 0 OUTPUT
36	CKR2	R PORT 2 SHIFT SIGNAL INPUT
37	TR2/ADD3	R PORT 2 TRANSFER SYNC I/O, ADDRESS 3 INPUT
38	GND	GND

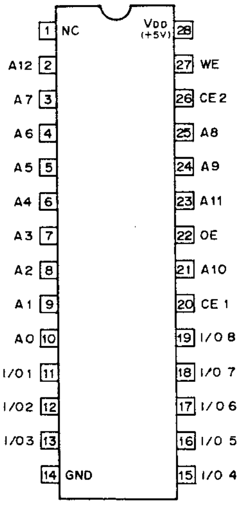
MODE SELECTION

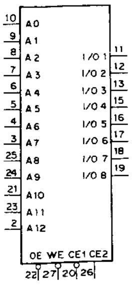
CONTROL INPUTS		TS, TR/ADD			MODE
RM	APM	TSM	TR 0-2	ADD 0-3	
0	0	0	OUT PUT	-	NON RECURSIVE MODE, TRANSFER SYNCHRONOUS MODE OUTPUT
0	0	1	IN-PUT	-	NON RECURSIVE MODE, TRANSFER SYNCHRONOUS MODE INPUT
0	1	-	-	IN-PUT	NON RECURSIVE MODE, ADDRESS PRESET MODE
1	0	0	OUT PUT	-	RECURSIVE MODE, TRANSFER SYNCHRONOUS MODE OUTPUT
1	0	1	IN-PUT	-	RECURSIVE MODE, TRANSFER SYNCHRONOUS MODE INPUT

0:LOW LEVEL 1:HIGH LEVEL

CXK5864BM-12L (SONY) (ACCESS TIME = 120nS)
CXK5864BP-10L (SONY) (ACCESS TIME = 100nS)

C-MOS 64K(8192x8)-BIT STATIC RAM
– TOP VIEW –

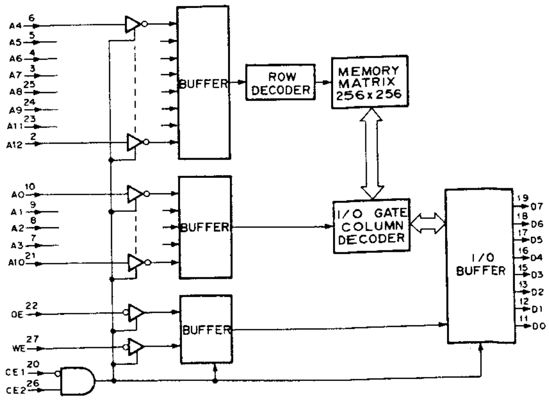

1 NC
2 A12
3 A7
4 A6
5 A5
6 A4
7 A3
8 A2
9 A1
10 A0
11 I/O1
12 I/O2
13 I/O3
14 GND
15 I/O 4
16 I/O 5
17 I/O 6
18 I/O 7
19 I/O 8
20 CE 1
21 A10
22 OE
23 A11
24 A9
25 A8
26 CE2
27 WE
28 VDD (+5V)


A0
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
I/O 1
I/O 2
I/O 3
I/O 4
I/O 5
I/O 6
I/O 7
I/O 8
OE WE CE1 CE2
22 27 20 26

A0-A12 ; ADDRESS INPUT
CE1, CE2 ; CHIP ENABLE INPUT
I/O1-I/O8 ; DATA INPUT/OUTPUT
OE ; OUTPUT ENABLE INPUT
WE ; WRITE ENABLE INPUT

CE1	CE2	OE	WE	MODE	I/O TERMINAL
1	X	X	X	NOT SELECT	HIGH IMPEDANCE
X	0	X	X	NOT SELECT	HIGH IMPEDANCE
0	1	1	1	OUTPUT DISABLE	HIGH IMPEDANCE
0	1	0	1	READ	OUTPUT DATA
0	1	X	0	WRITE	INPUT DATA

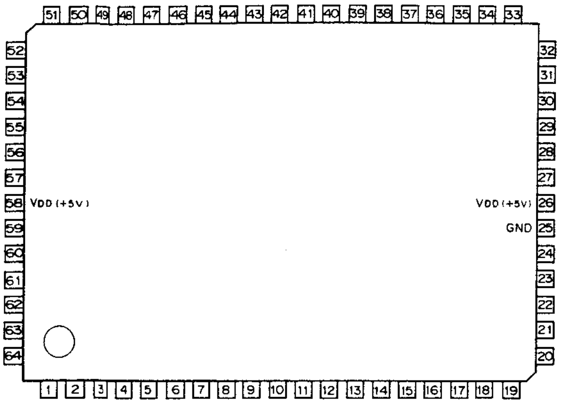
0;LOW LEVEL
1;HIGH LEVEL
X;DON'T CARE


A4 6
A5 5
A6 4
A7 3
A8 25
A9 24
A11 23
A12 2
BUFFER
ROW DECODER
MEMORY MATRIX 256x256
A0 10
A1 9
A2 8
A3 7
A10 21
BUFFER
I/O GATE COLUMN DECODER
I/O BUFFER
19 07
18 06
17 05
16 04
15 03
13 02
12 01
11 00
OE 22
WE 27
BUFFER
CE1 20
CE2 26

CXP5024H- ? ? ?Q (SONY) FLAT PACKAGE

C-MOS 4-BIT MICROCOMPUTER

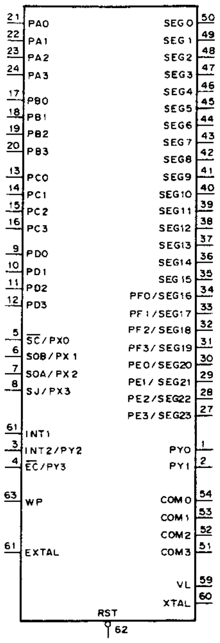
– TOP VIEW –


51 50 49 48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33
52 53 54 55 56 57 58 59 60 61 62 63 64
32 31 30 29 28 27 26 25 24 23 22 21 20
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
VDD (+5V)
VDD (+5V)
GND

INPUT
EC : EVENT COUNT CLOCK INPUT
EXTAL : CLOCK INPUT
INT1 – INT2 : INTERRUPT INPUTS
RST : RESET
SC : SERIAL CLOCK
SI : SERIAL INPUT
WP : WAKE UP INPUT

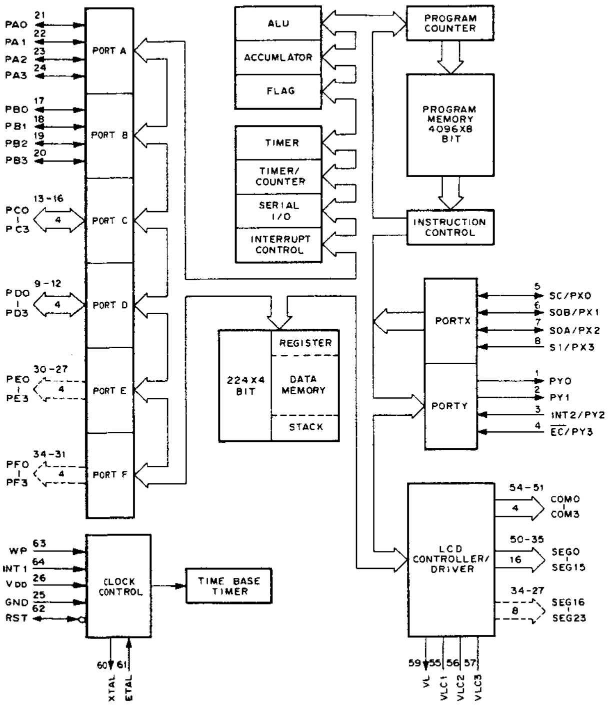
OUTPUT
COM0 – COM3 : COMON OUTPUTS
SEG0 – SEG23 : SEGMENT OUTPUTS
SOA, B : SERIAL OUTPUTS
VL : CUTOFF
XTAL : CLOCK OUTPUT

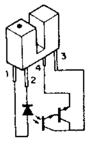
INPUT/OUTPUT
PA0 – PA3 : PORT A
PB0 – PB3 : PORT B
PC0 – PC3 : PORT C
PD0 – PD3 : PORT D
PE0 – PE3 : PORT E
PF0 – PF3 : PORT F
PX0 – PX3 : PORT X
PY0 – PY3 : PORT Y


21 PA0
22 PA1
23 PA2
24 PA3
17 PB0
18 PB1
19 PB2
20 PB3
13 PC0
14 PC1
15 PC2
16 PC3
9 PD0
10 PD1
11 PD2
12 PD3
5 SC/PX0
6 SOB/PX1
7 SOA/PX2
8 SI/PX3
61 INT1
3 INT2/PY2
4 EC/PY3
63 WP
61 EXTAL
SEG0 50
SEG1 49
SEG2 48
SEG3 47
SEG4 46
SEG5 45
SEG6 44
SEG7 43
SEG8 42
SEG9 41
SEG10 40
SEG11 39
SEG12 38
SEG13 37
SEG14 36
SEG15 35
PF0/SEG16 34
PF1/SEG17 33
PF2/SEG18 32
PF3/SEG19 31
PE0/SEG20 30
PE1/SEG21 29
PE2/SEG22 28
PE3/SEG23 27
PY0 1
PY1 2
COM0 54
COM1 53
COM2 52
COM3 51
VL 59
XTAL 60
RST 62

(VDD = + 5V)

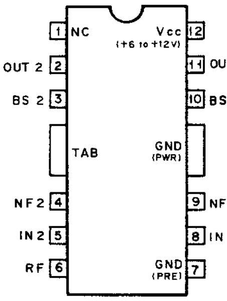
PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1	O	RY0	17	I/O	PB0	33	O	PF1/SEG17	49	O	SEG1
2	O	RY1	18	I/O	PB1	34	O	PF0/SEG16	50	O	SEG0
3	I	INT2/PY2	19	I/O	PB2	35	O	SEG15	51	O	COM3
4	I	$\overline{EC}$/PY3	20	I/O	PB3	36	O	SEG14	52	O	COM2
5	I/O	$\overline{SC}$/PX0	21	I/O	PA0	37	O	SEG13	53	O	COM1
6	I/O	SOB/PX1	22	I/O	PA1	38	O	SEG12	54	O	COM0
7	I/O	SOA/PX2	23	I/O	PA2	39	O	SEG11	55	–	V_{LC1}
8	I	SI/PX3	24	I/O	PA3	40	O	SEG10	56	–	V_{LC2}
9	I/O	PD0	25	–	Vss (GND)	41	O	SEG9	57	–	V_{LC3}
10	I/O	PD1	26	–	V_{DD}	42	O	SEG8	58	–	V_{DD}
11	I/O	PD2	27	O	PE3/SEG23	43	O	SEG7	59	O	V_L
12	I/O	PD3	28	O	PE2/SEG22	44	O	SEG6	60	O	XTAL
13	I/O	PC0	29	O	PE1/SEG21	45	O	SEG5	61	I	EXTAL
14	I/O	PC1	30	O	PE0/SEG20	46	O	SEG4	62	I/O	RST
15	I/O	PC2	31	O	PF3/SEG19	47	O	SEG3	63	I	WP
16	I/O	PC3	32	O	PF2/SEG18	48	O	SEG2	64	I	INT1


PA0 21
PA1 22
PA2 23
PA3 24
PORT A
PB0 17
PB1 18
PB2 19
PB3 20
PORT B
PC0 ~ PC3 13-16 4
PORT C
PD0 ~ PD3 9-12 4
PORT D
PE0 ~ PE3 30-27 4
PORT E
PF0 ~ PF3 34-31 4
PORT F
ALU
ACCUMLATOR
FLAG
TIMER
TIMER/COUNTER
SERIAL I/O
INTERRUPT CONTROL
PROGRAM COUNTER
PROGRAM MEMORY 4096X8 BIT
INSTRUCTION CONTROL
224X4 BIT
REGISTER
DATA MEMORY
STACK
PORTX
PORTY
5 SC/PX0
6 SOB/PX1
7 SOA/PX2
8 SI/PX3
1 PY0
2 PY1
3 INT2/PY2
4 EC/PY3
LCD CONTROLLER/DRIVER
54-51 4 COM0 ~ COM3
50-35 16 SEG0 ~ SEG15
34-27 8 SEG16 ~ SEG23
59 55 56 57
VL VLC1 VLC2 VLC3
WP 63
INT1 64
VDD 26
GND 25
RST 62
CLOCK CONTROL
TIME BASE TIMER
60 61
XTAL ETAL

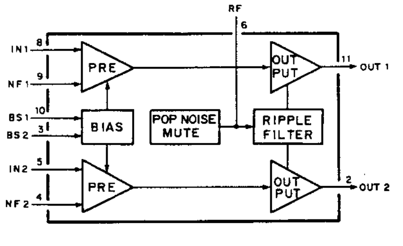


GP-1L52
GP-1L53

LA4550 (SANYO)
2CH AF POWER AMP
— TOP VIEW —

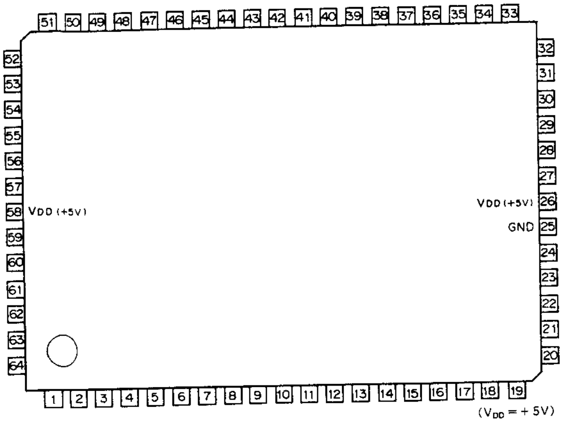

1 NC
Vcc (+6 to +12V) 12
OUT 2 2
11 OUT 1
BS 2 3
10 BS1
TAB
GND (PWR)
NF2 4
9 NF1
IN 2 5
8 IN 1
RF 6
GND (PRE) 7

BS1, BS2 ; BOOTSTRAP CAPACITOR
IN1, IN2 ; INPUTS
NF1, NF2 ; NEGATIVE FEEDBACK CONTROL
OUT1, OUT2 ; OUTPUTS
RF ; RIPPLE FILTER

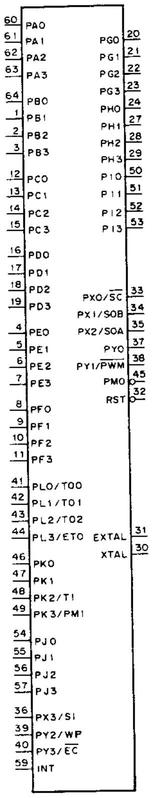

RF 6
IN1 8
NF1 9
BS1 10
BS2 3
IN2 5
NF2 4
PRE
BIAS
POP NOISE MUTE
RIPPLE FILTER
OUT PUT
PRE
OUT PUT
11 OUT 1
2 OUT 2

CXP5048H- ? ? ?Q (SONY) FLAT PACKAGE

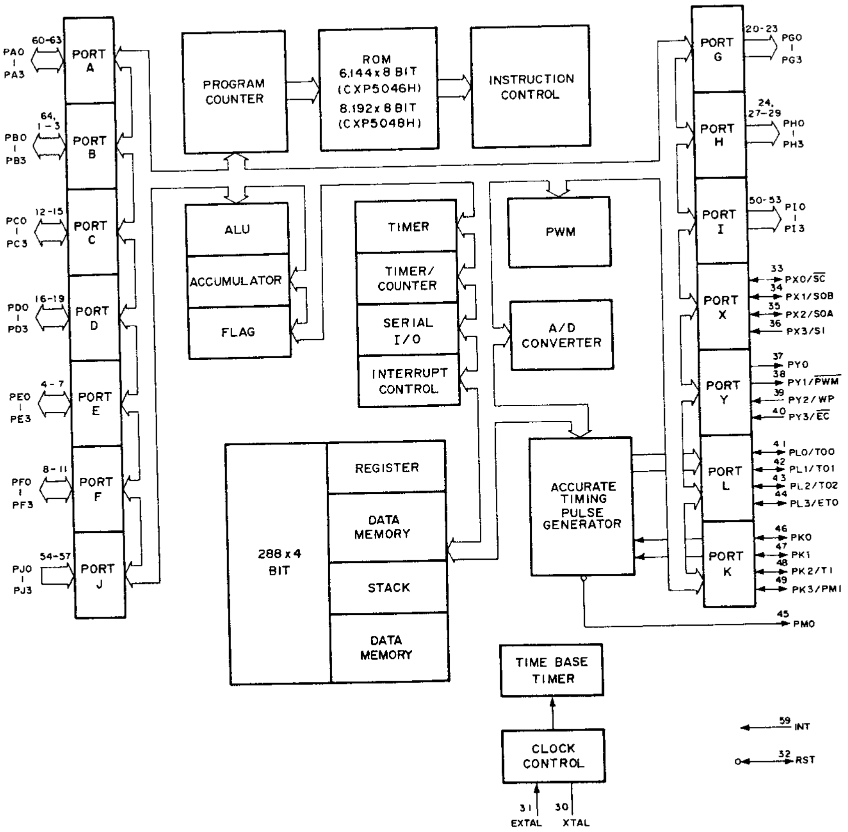
C-MOS 4-BIT MICROCOMPUTER
– TOP VIEW –


VDD (+5V)
VDD (+5V)
GND
(VDD = +5V)

PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1	I/O	PB1	17	I/O	PD1	33	I/O	PX0/$\overline{SC}$	49	I/O	PK3/PMI
2	I/O	PB2	18	I/O	PD2	34	I/O	PX1/SOB	50	O	PI0
3	I/O	PB3	19	I/O	PD3	35	I/O	PX2/SOA	51	O	PI1
4	I/O	PE0	20	O	PG0	36	I	PX3/SI	52	O	PI2
5	I/O	PE1	21	O	PG1	37	O	PY0	53	O	PI3
6	I/O	PE2	22	O	PG2	38	O	PY1/$\overline{PWM}$	54	I	PJ0
7	I/O	PE3	23	O	PG3	39	I	PY2/WP	55	I	PJ1
8	I/O	PF0	24	O	PH0	40	I	PY3/$\overline{EC}$	56	I	PJ2
9	I/O	PF1	25	–	GND	41	I/O	PL0/TO0	57	I	PJ3
10	I/O	PF2	26	–	VDD	42	I/O	PL1/TO1	58	–	VDD
11	I/O	PF3	27	O	PH1	43	I/O	PL2/TO2	59	I	INT
12	I/O	PC0	28	O	PH2	44	I/O	PL3/ETO	60	I/O	PA0
13	I/O	PC1	29	O	PH3	45	O	PMO	61	I/O	PA1
14	I/O	PC2	30	O	XTAL	46	I/O	PK0	62	I/O	PA2
15	I/O	PC3	31	I	EXTAL	47	I/O	PK1	63	I/O	PA3
16	I/O	PD0	32	I/O	RST	48	I/O	PK2/TI	64	I/O	PB0


PA0
PA1
PA2
PA3
PB0
PB1
PB2
PB3
PC0
PC1
PC2
PC3
PD0
PD1
PD2
PD3
PE0
PE1
PE2
PE3
PF0
PF1
PF2
PF3
PL0/TO0
PL1/TO1
PL2/TO2
PL3/ETO
PK0
PK1
PK2/TI
PK3/PMI
PJ0
PJ1
PJ2
PJ3
PX3/SI
PY2/WP
PY3/EC
INT
PG0
PG1
PG2
PG3
PH0
PH1
PH2
PH3
PI0
PI1
PI2
PI3
PX0/SC
PX1/SOB
PX2/SOA
PY0
PY1/PWM
PMO
RST
EXTAL
XTAL

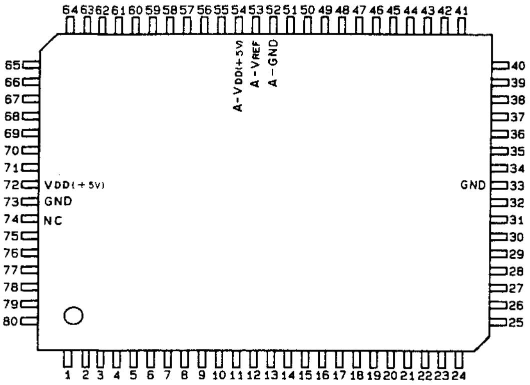
EC	;	EVENT COUNT CLOCK INPUT
ETO	;	EVENT COUNT OUTPUT
EXTAL	;	EXTERNAL CLOCK INPUT/ OSCILLATOR CONNECTION TERMINAL
INT	;	INTERRUPT INPUT
PMI	;	PULSE MODE INPUT
PMO	;	PULSE MODE OUTPUT
PWM	;	PULSE WIDTH MODULATED
RST	;	RESET INPUT
SC	;	SERIAL TRANSMISSION CLOCK
SI	;	SERIAL DATA INPUT
SOA,B	;	SERIAL DATA OUTPUT A,B
TI	;	TESTABLE DATA INPUT
TO0~2	;	TESTABLE DATA OUTPUT 0-2
WP	;	WAKE UP INPUT
XTAL	;	OSCILLATOR CONNECTION TERMINAL

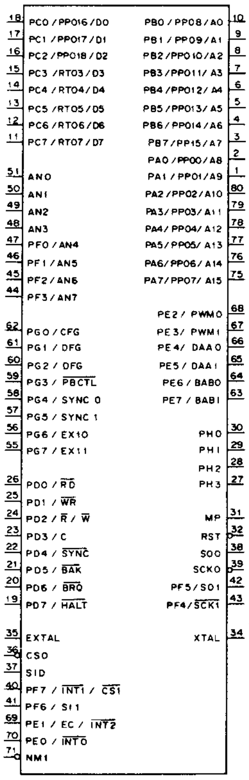

PORT A
PORT B
PORT C
PORT D
PORT E
PORT F
PORT J
PROGRAM COUNTER
ROM
6.144x8 BIT
(CXP5046H)
8.192x8 BIT
(CXP5048H)
INSTRUCTION CONTROL
ALU
ACCUMULATOR
FLAG
TIMER
TIMER/COUNTER
SERIAL I/O
INTERRUPT CONTROL
PWM
A/D CONVERTER
REGISTER
DATA MEMORY
288x4 BIT
STACK
DATA MEMORY
ACCURATE TIMING PULSE GENERATOR
TIME BASE TIMER
CLOCK CONTROL
EXTAL
XTAL
PORT G
PORT H
PORT I
PORT X
PORT Y
PORT L
PORT K
PMO
INT
RST

CXP80116-Q (SONY) FLAT PACKAGE

C-MOS 8-BIT MICROCOMPUTER

– TOP VIEW –


64 63 62 61 60 59 58 57 56 55 54 53 52 51 50 49 48 47 46 45 44 43 42 41
A-VDD(+5V)
A-VREF
A-GND
65
66
67
68
69
70
71
72 VDD(+5V)
73 GND
74 NC
75
76
77
78
79
80
40
39
38
37
36
35
34
GND 33
32
31
30
29
28
27
26
25
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24


18 PC0 / PPO16 / D0
17 PC1 / PPO17 / D1
16 PC2 / PPO18 / D2
15 PC3 / RTO3 / D3
14 PC4 / RTO4 / D4
13 PC5 / RTO5 / D5
12 PC6 / RTO6 / D6
11 PC7 / RTO7 / D7
51 AN0
50 AN1
49 AN2
48 AN3
47 PF0 / AN4
46 PF1 / AN5
45 PF2 / AN6
44 PF3 / AN7
62 PG0 / CFG
61 PG1 / DFG
60 PG2 / DFG
59 PG3 / $\overline{\text{PBCTL}}$
58 PG4 / SYNC 0
57 PG5 / SYNC 1
56 PG6 / EXI0
55 PG7 / EXI1
26 PD0 / $\overline{\text{RD}}$
25 PD1 / $\overline{\text{WR}}$
24 PD2 / $\overline{\text{R}}$ / $\overline{\text{W}}$
23 PD3 / C
22 PD4 / $\overline{\text{SYNC}}$
21 PD5 / $\overline{\text{BAK}}$
20 PD6 / $\overline{\text{BRQ}}$
19 PD7 / $\overline{\text{HALT}}$
35 EXTAL
36 CS0
37 SID
40 PF7 / $\overline{\text{INT1}}$ / $\overline{\text{CS1}}$
41 PF6 / SI1
69 PE1 / EC / $\overline{\text{INT2}}$
70 PE0 / $\overline{\text{INT0}}$
71 NM1
PB0 / PP08 / A0 10
PB1 / PP09 / A1 9
PB2 / PPO10 / A2 8
PB3 / PPO11 / A3 7
PB4 / PPO12 / A4 6
PB5 / PPO13 / A5 5
PB6 / PPO14 / A6 4
PB7 / PP15 / A7 3
PA0 / PPO0 / A8 2
PA1 / PPO1 / A9 1
PA2 / PPO2 / A10 80
PA3 / PPO3 / A11 79
PA4 / PPO4 / A12 78
PA5 / PPO5 / A13 77
PA6 / PPO6 / A14 76
PA7 / PPO7 / A15 75
PE2 / PWM0 68
PE3 / PWM1 67
PE4 / DAA0 66
PE5 / DAA1 65
PE6 / BAB0 64
PE7 / BAB1 63
PH0 30
PH1 29
PH2 28
PH3 27
MP 31
RST 32
SO0 38
SCK0 39
PF5 / SO1 42
PF4 / $\overline{\text{SCK1}}$ 43
XTAL 34

INPUT

AN0 – AN7	: ANALOG INPUTS
BRQ	: BUS REQUEST INPUT
CFG	: CAPSTAN FG INPUT
CS0.1	: CHIP SELECT INPUTS
DFG	: DRUM FG INPUT
DPG	: DRUM PG INPUT
EC	: EVENT INPUT
EXI0.1	: EXTERNAL INPUTS
EXTAL	: SYSTEM CLOCK GENERATE JOINT
HALT	: CPU STOP INPUT
INT0 – INT2	: EXTERNAL OFFERING INPUTS
MP	: MICRO PROSESSOR MODE INPUT
NMI	: NONMASKABLE OFFERING INPUT
PBCTL	: PB CTL PULSE INPUT
PE0.1	: PORT E INPUTS
PF0 – PF7	: PORT F INPUTS
PG0 – PG7	: PORT G INPUTS
SI0.1	: SERIAL DATA INPUTS
SYNC0.1	: COMPOSITE SYNC INPUTS

OUTPUT

A0 – A15	: ADDRESS BUS OUTPUTS
BAK	: BUS ACKNOWLEGE OUTPUT
C	: TIMING SIGNAL OUTPUT
DAA0.1	: DA GATE PULSE OUTPUTS
DAB0.1	: DA GATE PULSE OUTPUTS
PA0 – PA7	: PORT A OUTPUTS
PB0 – PB7	: PORT B OUTPUTS
PE2 – PE7	: PORT E OUTPUTS
PH0 – PH3	: PORT H OUTPUTS
PPO0 – PPO18	: PROGRAMMABLE PATTERN GENERATOR OUTPUTS
PWM0.1	: PWM OUTPUTS
R/W	: CPU MACHINE SYCLE
RD	: READ
RTO3 – RTO7	: REAL TIME PULSE OUTPUTS
SO0.1	: SERIAL DATA OUTPUTS
SYNC	: SYNC
WR	: WRITE
XTAL	: SYSTEM CLOCK GENERATER OUTPUT

INPUT/OUTPUT

D0 – D7	: DATA BUS
PC0 – PC7	: PORT C
PD0 – PD7	: PORT D
RST	: RESET
SCK0.1	: SERIAL CLOCK

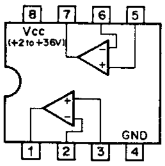
(V_{DD} = + 5V)

PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1	O	PA1/PPO1/A9	41	I	PF6/SI1
2	O	PA0/PPO0/A8	42	I/O	PF5/SO1
3	O	PB7/PPO15/A7	43	I,I/O	PF4/$\overline{\text{SCK1}}$
4	O	PB6/PPO14/A6	44	I	PF3/AN7
5	O	PB5/PPO13/A5	45	I	PF2/AN6
6	O	PB4/PPO12/A4	46	I	PF1/AN5
7	O	PB3/PPO11/A3	47	I	PF0/AN4
8	O	PB2/PPO10/A2	48	I	AN3
9	O	PB1/PPO9/A1	49	I	AN2
10	O	PB0/PPO8/A0	50	I	AN1
11	I/O,O,I/0	PC7/RTO7/D7	51	I	AN0
12	I/O,O,I/0	PC6/RTO6/D6	52	–	A-GND
13	I/O,O,I/0	PC5/RTO5/D5	53	–	A-V_{REF}
14	I/O,O,I/0	PC4/RTO4/D4	54	–	A-V_{DD}
15	I/O,O,I/0	PC3/RTO3/D3	55	I	PG7/EXI1
16	I/O,O,I/0	PC2/PPO18/D2	56	I	PG6/EXI0
17	I/O,O,I/0	PC1/PPO17/D1	57	I	PG5/SYNC1
18	I/O,O,I/0	PC0/PPO16/D0	58	I	PG4/SYNC0
19	I/O,0	PD7/$\overline{\text{HALT}}$	59	I	PG3/$\overline{\text{PBCTL}}$
20	I/O,0	PD6/$\overline{\text{BRQ}}$	60	I	PG2/DPG
21	I/O,0	PD5/$\overline{\text{BAK}}$	61	I	PG1/DFG
22	I/O,0	PD4/$\overline{\text{SYNC}}$	62	I	PG0/CFG
23	I/O,0	PD3/C	63	O	PE7/DAB1
24	I/O,0	PD2/R/$\overline{\text{W}}$	64	O	PE6/DAB0
25	I/O,0	PD1/$\overline{\text{WR}}$	65	O	PE5/DAA1
26	I/O,0	PD0/$\overline{\text{RD}}$	66	O	PE4/DAA0
27	O	PH3	67	O	PE3/PWM1
28	O	PH2	68	O	PE2/PWM0
29	O	PH1	69	I	PE1/$\overline{\text{EC}}$/$\overline{\text{INT2}}$
30	O	PH0	70	I	PE0/$\overline{\text{INT0}}$
31	I	MP	71	I	$\overline{\text{NMI}}$
32	I/O	RST	72	–	V_{DD}
33	–	GND	73	–	GND
34	O	XTAL	74	–	NC
35	I	EXTAL	75	O	PA7/PPO7/A15
36	I	CS0	76	O	PA6/PPO6/A14
37	I	SI0	77	O	PA5/PPO5/A13
38	O	SO0	78	O	PA4/PPO4/A12
39	I/O	SCK0	79	O	PA3/PPO3/A11
40	I	PF7/$\overline{\text{INT1}}$/$\overline{\text{CS1}}$	80	O	PA2/PPO2/A10

LM2903DQ (RAYTHEON)
LM2903M (RAYTHEON) FLAT PACKAGE
uPC393G2 (NEC) FLAT PACKAGE

DUAL VOLTAGE COMPARATORS

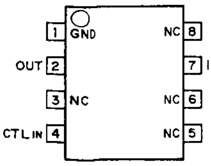
– TOP VIEW –


8
7
6
5
Vcc
(+2 to +36V)
GND
1
2
3
4

LA50 ? ? M (SANYO) FLAT PACKAGE

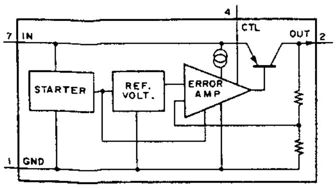
VOLTAGE REGULATOR

– TOP VIEW –


1 GND
OUT 2
3 NC
CTL IN 4
NC 8
7 IN
NC 6
NC 5

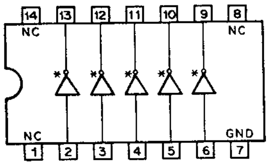
LA50 ? ? M

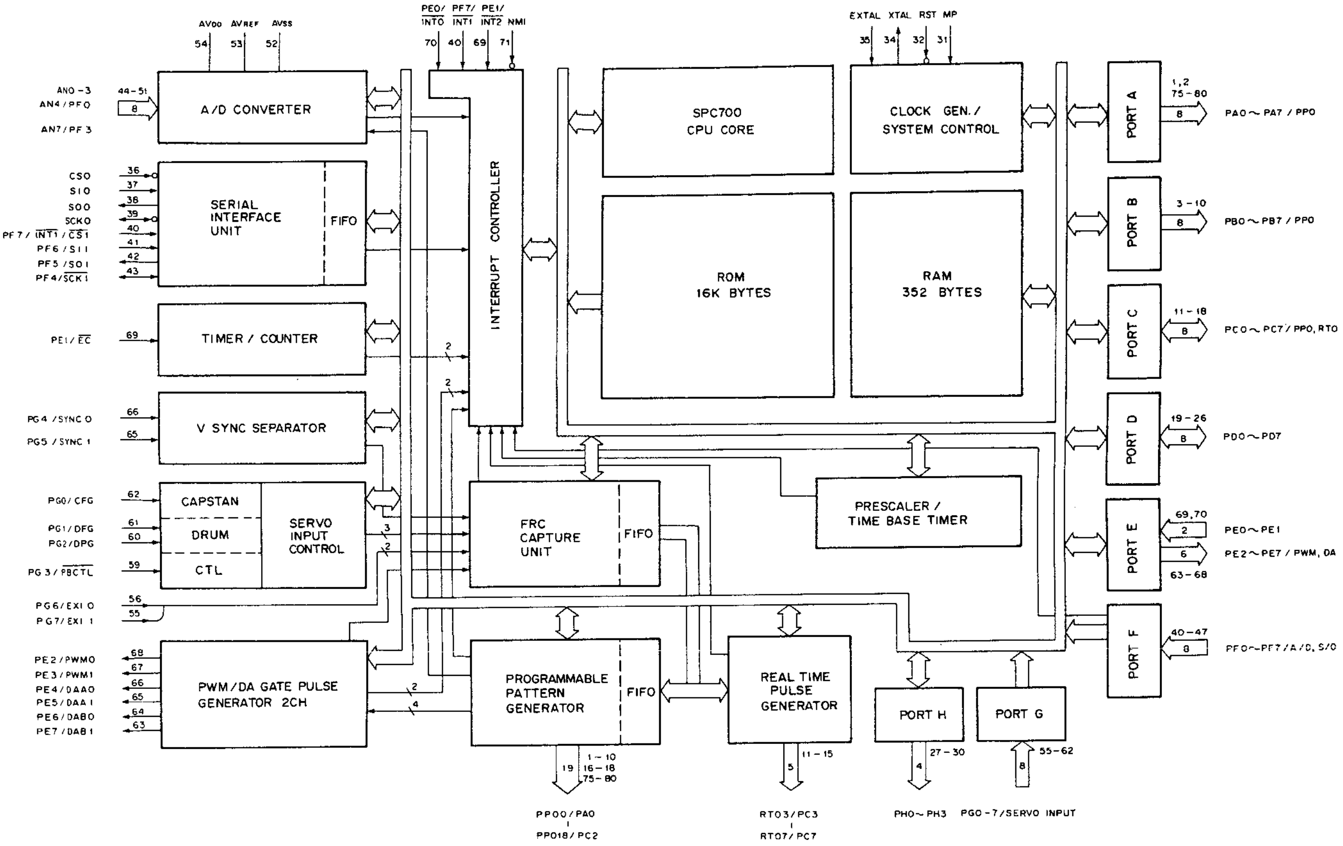
? ?	OUT PUT VOLTAGE
02	2 V
03	3 V
04	4 V
05	5 V
06	6 V
08	8 V
09	9 V
10	10V


4
CTL
7 IN
OUT 2
STARTER
REF. VOLT.
ERROR AMP
1 GND

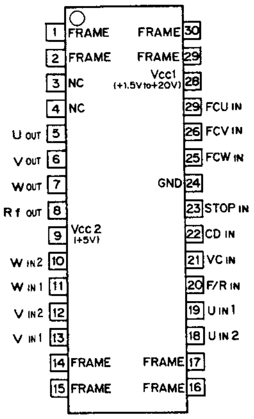
CTL ; CONTROL

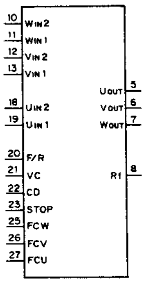
M54516P (MITSUBISHI)
INVERTER WITH OPEN-COLLECTOR
(DARLINGTON-CONNECTED TRANSISTOR ARRAY)
— TOP VIEW —


14
13
12
11
10
9
8
NC
NC
NC
GND
1
2
3
4
5
6
7


AVDD AVREF AVSS
54 53 52
PE0/INT0 PF7/INT1 PE1/INT2 NMI
70 40 69 71
EXTAL XTAL RST MP
35 34 32 31
AN0-3
AN4/PF0
AN7/PF3
44-51
8
A/D CONVERTER
CS0
SI0
SO0
SCK0
PF7/INT1/CS1
PF6/SI1
PF5/SO1
PF4/SCK1
36 37 38 39 40 41 42 43
SERIAL INTERFACE UNIT
FIFO
PE1/EC
69
TIMER/COUNTER
PG4/SYNC O
PG5/SYNC I
66 65
V SYNC SEPARATOR
PG0/CFG
PG1/DFG
PG2/DPG
PG3/PBCTL
62 61 60 59
CAPSTAN
DRUM
CTL
SERVO INPUT CONTROL
PG6/EXI 0
PG7/EXI 1
56 55
PE2/PWM0
PE3/PWM1
PE4/DAA0
PE5/DAA1
PE6/DAB0
PE7/DAB1
68 67 66 65 64 63
PWM/DA GATE PULSE GENERATOR 2CH
INTERRUPT CONTROLLER
2 2 3 2 2 4
SPC700 CPU CORE
CLOCK GEN./SYSTEM CONTROL
ROM 16K BYTES
RAM 352 BYTES
FRC CAPTURE UNIT
FIFO
PRESCALER/TIME BASE TIMER
PROGRAMMABLE PATTERN GENERATOR
FIFO
REAL TIME PULSE GENERATOR
PORT H
PORT G
PORT A
1,2 75-80
8
PA0~PA7/PP0
PORT B
3-10
8
PB0~PB7/PP0
PORT C
11-18
8
PC0~PC7/PP0, RT0
PORT D
19-26
8
PD0~PD7
PORT E
69,70
2
PE0~PE1
6
PE2~PE7/PWM, DA
63-68
PORT F
40-47
8
PF0~PF7/A/D, S/O
19 1-10 16-18 75-80
PP00/PA0
PP018/PC2
5 11-15
RT03/PC3
RT07/PC7
4 27-30
PH0~PH3
8 55-62
PG0-7/SERVO INPUT

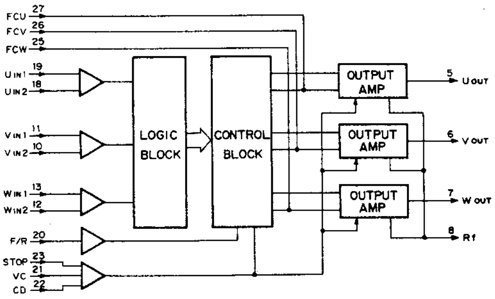
LB1616M (SANYO) FLAT PACKAGE
3DD MOTOR DRIVER
– TOP VIEW –


1 FRAME
2 FRAME
3 NC
4 NC
U OUT 5
V OUT 6
W OUT 7
Rf OUT 8
9 Vcc 2 (+5V)
W IN2 10
W IN1 11
V IN2 12
V IN1 13
14 FRAME
15 FRAME
FRAME 30
FRAME 29
Vcc1 (+1.5V to +20V) 28
27 FCU IN
26 FCV IN
25 FCW IN
GND 24
23 STOP IN
22 CD IN
21 VC IN
20 F/R IN
19 U IN1
18 U IN2
FRAME 17
FRAME 16

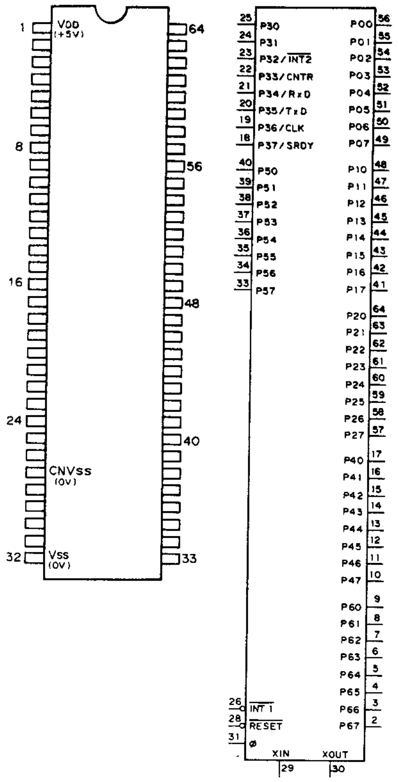

10 WIN2
11 WIN1
12 VIN2
13 VIN1
18 UIN2
19 UIN1
20 F/R
21 VC
22 CD
23 STOP
25 FCW
26 FCV
27 FCU
UOUT 5
VOUT 6
WOUT 7
Rf 8

INPUT
CD : CURRENT DETECT
FCU,FCV,FCW
: FREQUENCY RESPONSE
F/R : FWD/REW CONTROL
STOP : OVER CURRENT REFERENCE
U IN1,2 : U PHASE INPUTS
VC : SPEED/PHASE CONTROL
V IN1,2 : V PHASE INPUTS
W IN1,2 : W PHASE INPUTS

OUTPUT
Rf : OUTPUT CURRENT DETECT
U OUT : U PHASE OUTPUT
V OUT : V PHASE OUTPUT
W OUT : W PHASE OUTPUT

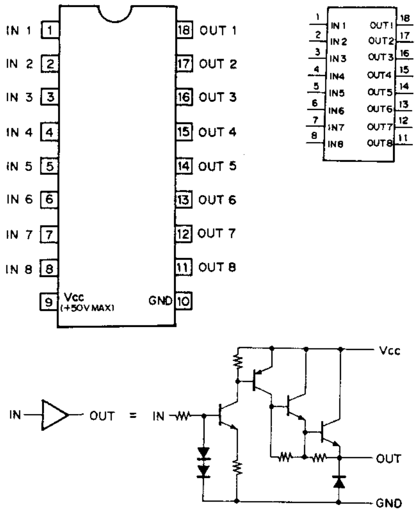

FCU 27
FCV 26
FCW 25
UIN1 19
UIN2 18
VIN1 11
VIN2 10
WIN1 13
WIN2 12
F/R 20
STOP 23
VC 21
CD 22
LOGIC BLOCK
CONTROL BLOCK
OUTPUT AMP
OUTPUT AMP
OUTPUT AMP
5 UOUT
6 VOUT
7 WOUT
8 Rf

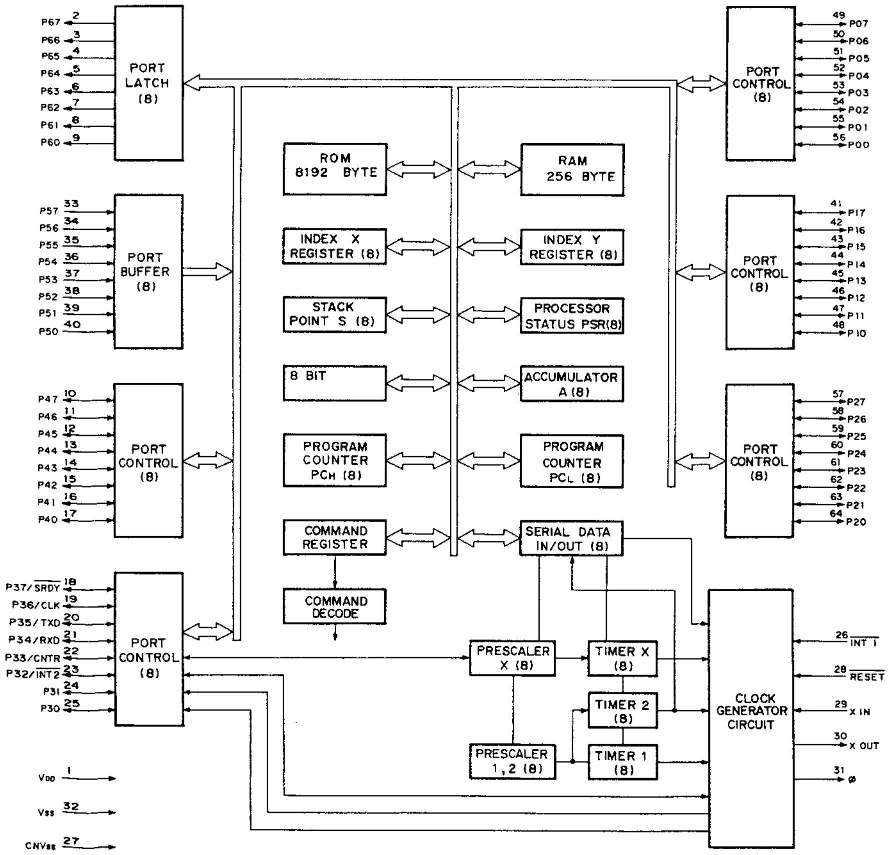
M50747H-XXXSP
C-MOS PROCESS 8-BIT ONE CHIP MICROCOMPUTER
— TOP VIEW —


VDD (+5V)
CNVss (0V)
Vss (0V)
1
8
16
24
32
33
40
48
56
64
P30
P31
P32/INT2
P33/CNTR
P34/RxD
P35/TxD
P36/CLK
P37/SRDY
P50
P51
P52
P53
P54
P55
P56
P57
P00
P01
P02
P03
P04
P05
P06
P07
P10
P11
P12
P13
P14
P15
P16
P17
P20
P21
P22
P23
P24
P25
P26
P27
P40
P41
P42
P43
P44
P45
P46
P47
P60
P61
P62
P63
P64
P65
P66
P67
INT 1
RESET
ø
XIN
XOUT

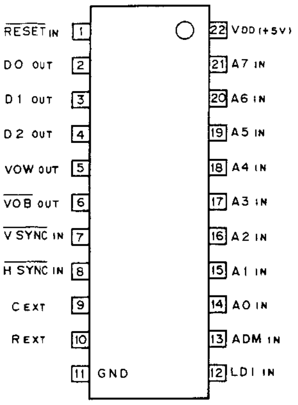
INT 1 ; INTERRUPT 1 IN
P00-P07 ;
P10-P17 ;
P20-P27 ; 8 BIT I/O PORT
P30-P37 ;
P40-P47 ;
P50-P57; 8 BIT IN PORT
P60-P67; 8 BIT OUT PORT
RESET ; RESET IN (‾_)
X IN/OUT ; CLOCK IN/OUT
ø ; CLOCK TIMING OUT
P32/INT2 ; PORT/INTERRUP2 IN/OUT
P33/CNTR ; PORT/CONTROL IN/OUT
P34/RXD ; RECEIVED DATA
P35/TXD ; TRANCEMITTED DATA
P36/CLK ; PORT/CLOCK IN/OUT
P37/SRDY ; SERIAL IN READY

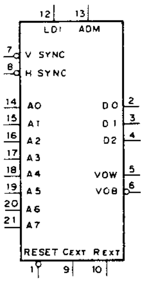
M54562P (MITSUBISHI)
SOURCE TYPE DARLINGTON TRANSISTOR ARRAY
— TOP VIEW —

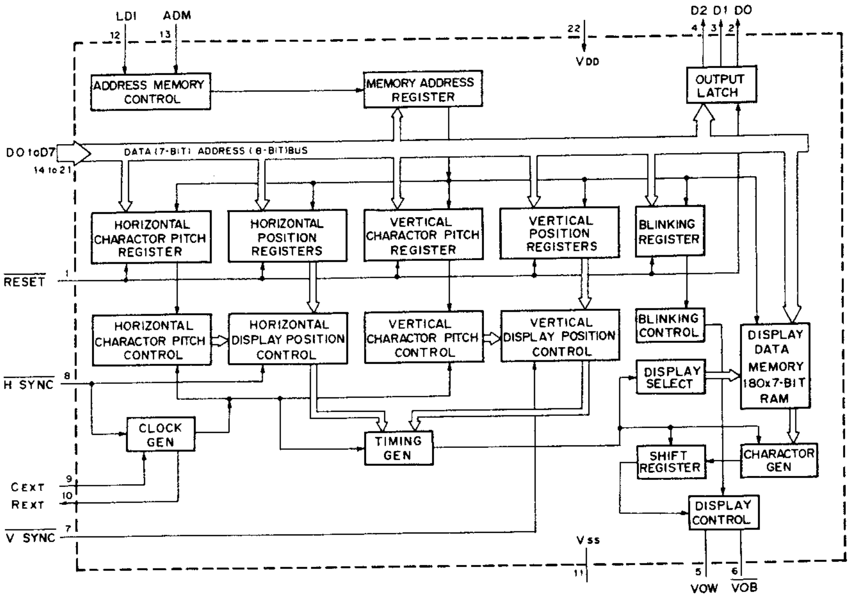

IN 1
IN 2
IN 3
IN 4
IN 5
IN 6
IN 7
IN 8
Vcc (+50V MAX)
GND
OUT 1
OUT 2
OUT 3
OUT 4
OUT 5
OUT 6
OUT 7
OUT 8
IN1
IN2
IN3
IN4
IN5
IN6
IN7
IN8
OUT1
OUT2
OUT3
OUT4
OUT5
OUT6
OUT7
OUT8
IN
OUT
=
IN
Vcc
OUT
GND


PORT LATCH (8)
PORT BUFFER (8)
PORT CONTROL (8)
ROM 8192 BYTE
RAM 256 BYTE
INDEX X REGISTER (8)
INDEX Y REGISTER (8)
STACK POINT S (8)
PROCESSOR STATUS PSR(8)
8 BIT
ACCUMULATOR A (8)
PROGRAM COUNTER PCH (8)
PROGRAM COUNTER PCL (8)
COMMAND REGISTER
SERIAL DATA IN/OUT (8)
COMMAND DECODE
PRESCALER X (8)
TIMER X (8)
TIMER 2 (8)
PRESCALER 1,2 (8)
TIMER 1 (8)
CLOCK GENERATOR CIRCUIT
P67
P66
P65
P64
P63
P62
P61
P60
P57
P56
P55
P54
P53
P52
P51
P50
P47
P46
P45
P44
P43
P42
P41
P40
P37/SRDY
P36/CLK
P35/TXD
P34/RXD
P33/CNTR
P32/INT2
P31
P30
VDD
Vss
CNVss
P07
P06
P05
P04
P03
P02
P01
P00
P17
P16
P15
P14
P13
P12
P11
P10
P27
P26
P25
P24
P23
P22
P21
P20
INT 1
RESET
X IN
X OUT
ø

MB88303 (FUJITSU)
N-MOS PROGRAMMABLE TV DISPLAY CONTROLLER
— TOP VIEW —


RESET IN 1
D0 OUT 2
D1 OUT 3
D2 OUT 4
VOW OUT 5
VOB OUT 6
V SYNC IN 7
H SYNC IN 8
C EXT 9
R EXT 10
11 GND
22 VDD (+5V)
21 A7 IN
20 A6 IN
19 A5 IN
18 A4 IN
17 A3 IN
16 A2 IN
15 A1 IN
14 A0 IN
13 ADM IN
12 LDI IN

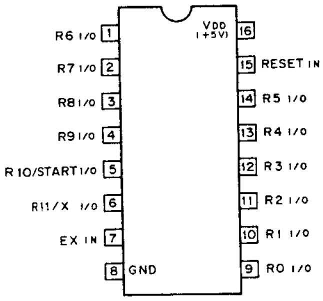

LDI
ADM
V SYNC
H SYNC
A0
A1
A2
A3
A4
A5
A6
A7
D0
D1
D2
VOW
VOB
RESET
CEXT
REXT

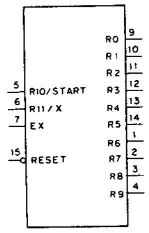

LDI
ADM
VDD
D2 D1 D0
ADDRESS MEMORY CONTROL
MEMORY ADDRESS REGISTER
OUTPUT LATCH
D0 to D7
DATA (7-BIT) ADDRESS (8-BIT) BUS
HORIZONTAL CHARACTOR PITCH REGISTER
HORIZONTAL POSITION REGISTERS
VERTICAL CHARACTOR PITCH REGISTER
VERTICAL POSITION REGISTERS
BLINKING REGISTER
RESET
HORIZONTAL CHARACTOR PITCH CONTROL
HORIZONTAL DISPLAY POSITION CONTROL
VERTICAL CHARACTOR PITCH CONTROL
VERTICAL DISPLAY POSITION CONTROL
BLINKING CONTROL
DISPLAY DATA MEMORY 180x7-BIT RAM
DISPLAY SELECT
H SYNC
CLOCK GEN
TIMING GEN
SHIFT REGISTER
CHARACTOR GEN
CEXT
REXT
DISPLAY CONTROL
V SYNC
VSS
VOW
VOB

b3-b0 / b5-b4	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
00	A	B	C	D	E	F	G	H	I	J	K	L	M	·	␣	BLANK
01	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	:	■	(
10	0	1	2	3	4	5	6	7	8	9	?	!	’	.	BACK	)
11	↑	↓	←	→	+	—	*	/	=	&						

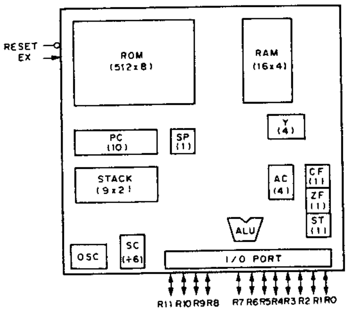
ADM	; ADDRESS INCREMENT MODE
A0 to A7	; ADDRESS INPUT
D0 to D2	; DATA OUTPUT
C EXT	; EXT CAPACITOR FOR OSC
LDI	; LOAD DATA AND INSTRUCTION
VOB	; VIDEO BLACK OUT
VOW	; VIDEO WHITE OUT
R EXT	; EXT RESISTOR FOR OSC

MB88201H (FUJITSU)
C-MOS 4 BIT MICROCOMPUTER
— TOP VIEW —

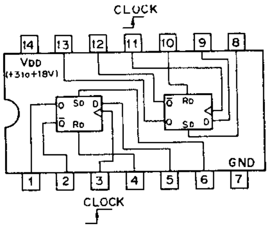

R6 I/O 1
R7 I/O 2
R8 I/O 3
R9 I/O 4
R10/START I/O 5
R11/X I/O 6
EX IN 7
8 GND
16 VDD (+5V)
15 RESET IN
14 R5 I/O
13 R4 I/O
12 R3 I/O
11 R2 I/O
10 R1 I/O
9 R0 I/O


R10/START
R11/X
EX
RESET
R0
R1
R2
R3
R4
R5
R6
R7
R8
R9

EX	; EXTERNAL X'TAL IN
R0-R11	; I/O PORT(R) IN/OUT
RESET	; RESET IN
START	; STANDBY RELEASE IN
R11/X	; EXT CLOCK IN/INT CLOCK OUT


RESET
EX
ROM (512x8)
RAM (16x4)
Y (4)
PC (10)
SP (1)
STACK (9x2)
AC (4)
CF (1)
ZF (1)
ST (1)
ALU
OSC
SC (+6)
I/O PORT
R11 R10 R9 R8
R7 R6 R5 R4 R3 R2 R1 R0

MC14013BCP (MOTOROLA)
C-MOS D-TYPE FLIP-FLOP WITH DIRECT SET/RESET
— TOP VIEW —


CLOCK
VDD (+3 to +18V)
SD
RD
D
Q
GND
CLOCK

DIRECT R-S FLIP FLOP

SD	RD	Q	$\overline{Q}$
0	0	Qn	$\overline{Qn}$
0	1	0	1
1	0	1	0
1	1	1	1

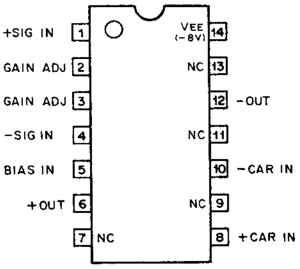
0 : LOW LEVEL
1 : HIGH LEVEL

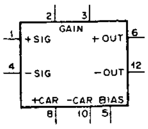
D-TYPE FLIP FLOP

CKn	CKn+1
D	Q
0	0
1	1

CLOCK CK ; ⎍
CKn ; BEFORE CLOCK
CKn+1 ; AFTER CLOCK

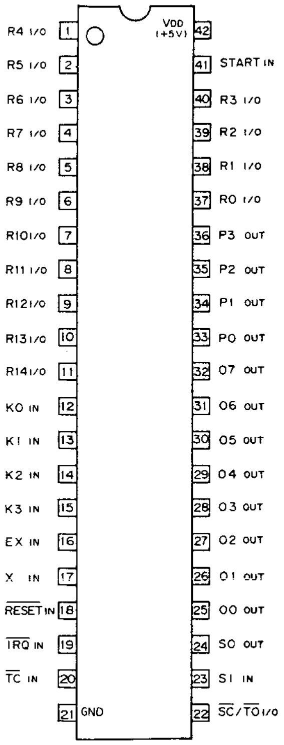
MC1496P (MOTOROLA)
BALANCED MODULATOR/DEMODULATOR
– TOP VIEW –

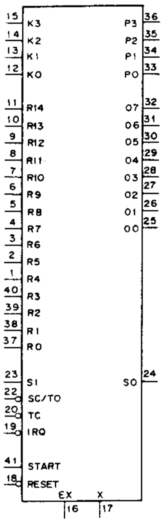

+SIG IN 1
GAIN ADJ 2
GAIN ADJ 3
–SIG IN 4
BIAS IN 5
+OUT 6
7 NC
14 VEE (–8V)
NC 13
12 –OUT
NC 11
10 –CAR IN
NC 9
8 +CAR IN


GAIN
+SIG
–SIG
+OUT
–OUT
+CAR
–CAR
BIAS

M88505H (FUJITSU)

C-MOS 4-BIT ONE-CHIP MICROCOMPUTER
- TOP VIEW -

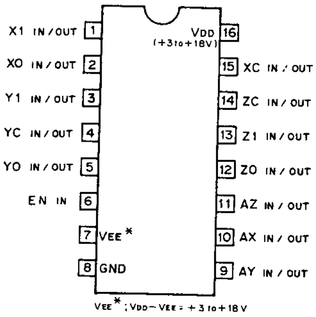

R4 I/O 1
R5 I/O 2
R6 I/O 3
R7 I/O 4
R8 I/O 5
R9 I/O 6
R10 I/O 7
R11 I/O 8
R12 I/O 9
R13 I/O 10
R14 I/O 11
K0 IN 12
K1 IN 13
K2 IN 14
K3 IN 15
EX IN 16
X IN 17
RESET IN 18
IRQ IN 19
TC IN 20
21 GND
42 VDD (+5V)
41 START IN
40 R3 I/O
39 R2 I/O
38 R1 I/O
37 R0 I/O
36 P3 OUT
35 P2 OUT
34 P1 OUT
33 P0 OUT
32 O7 OUT
31 O6 OUT
30 O5 OUT
29 O4 OUT
28 O3 OUT
27 O2 OUT
26 O1 OUT
25 O0 OUT
24 SO OUT
23 SI IN
22 SC/TO I/O

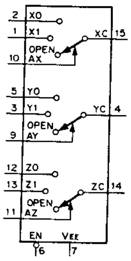

15 K3
14 K2
13 K1
12 K0
11 R14
10 R13
9 R12
8 R11
7 R10
6 R9
5 R8
4 R7
3 R6
2 R5
1 R4
40 R3
39 R2
38 R1
37 R0
23 SI
22 SC/TO
20 TC
19 IRQ
41 START
18 RESET
EX 16
X 17
P3 36
P2 35
P1 34
P0 33
O7 32
O6 31
O5 30
O4 29
O3 28
O2 27
O1 26
O0 25
SO 24

EX ; EXTERNAL CLOCK IN
$\overline{\text{IRQ}}$; INTERRUPT REQUEST IN
K0-K3 ; 4-BIT PARALLEL IN
O0-O7 ; 4-BIT PARALLEL OUT
P0-P3 ; 4-BIT PARALLEL OUT
R0-R14 ; DATA IN/OUT
$\overline{\text{RESET}}$; RESET IN
$\overline{\text{SC}}/\overline{\text{TO}}$; SHIFT CLOCK IN/INT TIMING OUT
SI ; SERIAL DATA IN
SO ; SERIAL DATA OUT
START ; STANDBY OFF IN
$\overline{\text{TC}}$; EXTERNAL CLOCK IN FOR COUNTER
X ; CLOCK OUT

MC14053BCP (MOTOROLA)
MC14053BF (MOTOROLA) FLAT PACKAGE
TC4053BF (TOSHIBA) FLAT PACKAGE
TC4053BFHB (TOSHIBA) FLAT PACKAGE

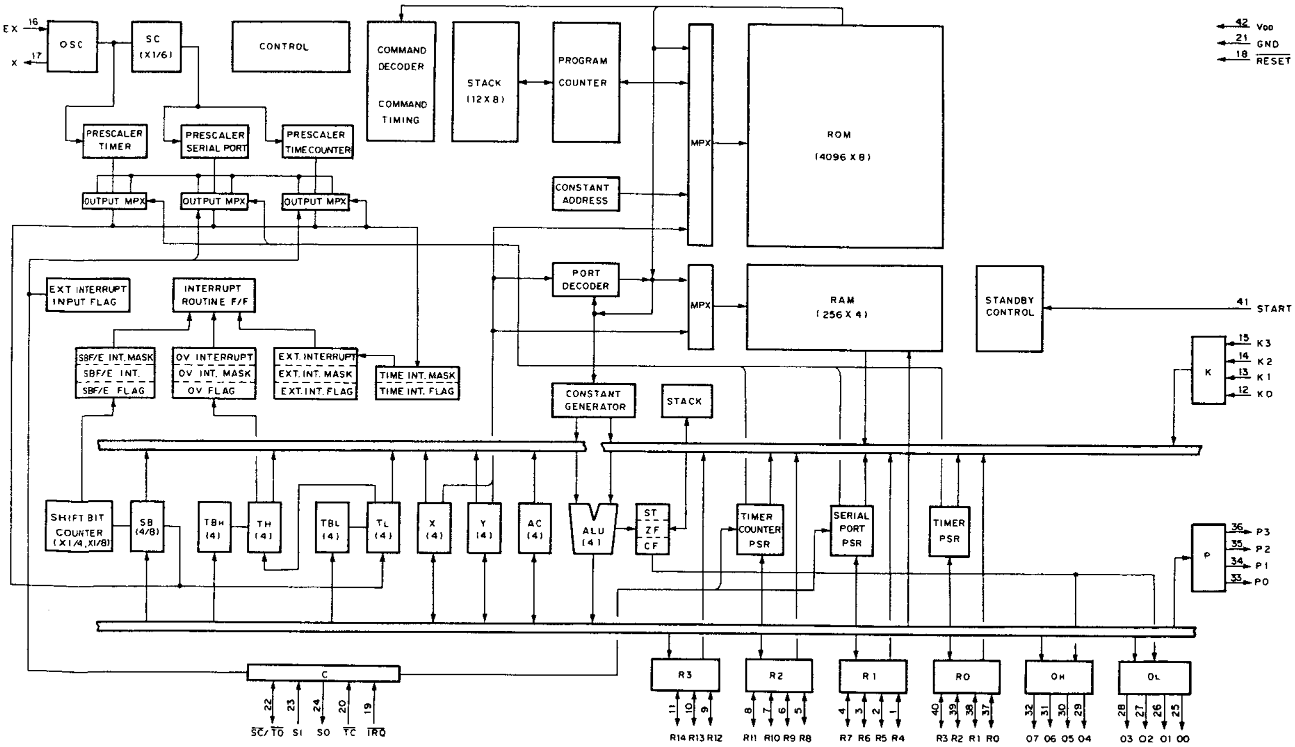
C-MOS TRIPLE 2-CHANNEL ANALOG MULTIPLEXER/DEMULTIPLEXER
- TOP VIEW -


X1 IN/OUT 1
X0 IN/OUT 2
Y1 IN/OUT 3
YC IN/OUT 4
Y0 IN/OUT 5
EN IN 6
7 VEE*
8 GND
16 VDD (+3 to +18V)
15 XC IN/OUT
14 ZC IN/OUT
13 Z1 IN/OUT
12 Z0 IN/OUT
11 AZ IN/OUT
10 AX IN/OUT
9 AY IN/OUT
VEE* ; VDD − VEE = +3 to +18 V

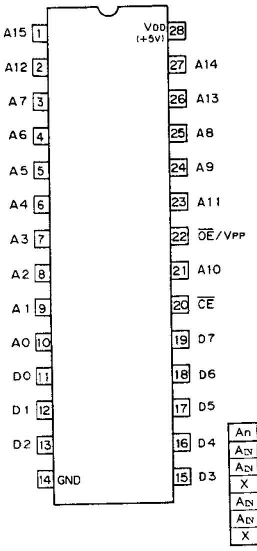

2 X0
1 X1
10 AX
OPEN
XC 15
5 Y0
3 Y1
9 AY
OPEN
YC 4
12 Z0
13 Z1
11 AZ
OPEN
ZC 14
EN 6
VEE 7

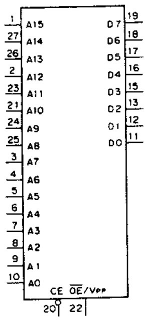
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE.

CONT. INPUTS		ON CHANNEL
EN	A (X,Y,Z,)	
0	0	0
0	1	1
1	X	OPEN


EX 16
X 17
OSC
SC (X1/6)
CONTROL
COMMAND DECODER
COMMAND TIMING
STACK (12X8)
PROGRAM COUNTER
MPX
ROM (4096 X 8)
42 VDD
21 GND
18 RESET
PRESCALER TIMER
PRESCALER SERIAL PORT
PRESCALER TIME COUNTER
OUTPUT MPX
OUTPUT MPX
OUTPUT MPX
CONSTANT ADDRESS
PORT DECODER
MPX
RAM (256 X 4)
STANDBY CONTROL
41 START
EXT INTERRUPT INPUT FLAG
INTERRUPT ROUTINE F/F
SBF/E INT. MASK
SBF/E INT.
SBF/E FLAG
OV INTERRUPT
OV INT. MASK
OV FLAG
EXT. INTERRUPT
EXT. INT. MASK
EXT. INT. FLAG
TIME INT. MASK
TIME INT. FLAG
CONSTANT GENERATOR
STACK
K
15 K3
14 K2
13 K1
12 K0
SHIFT BIT COUNTER (X1/4, X1/8)
SB (4/8)
TBH (4)
TH (4)
TBL (4)
TL (4)
X (4)
Y (4)
AC (4)
ALU (4)
ST
ZF
CF
TIMER COUNTER PSR
SERIAL PORT PSR
TIMER PSR
P
36 P3
35 P2
34 P1
33 P0
C
22 SC/TO
23 SI
24 SO
20 TC
19 IRQ
R3
11 10 9
R14 R13 R12
R2
8 7 6 5
R11 R10 R9 R8
R1
4 3 2 1
R7 R6 R5 R4
R0
40 39 38 37
R3 R2 R1 R0
OH
32 31 30 29
O7 O6 O5 O4
OL
28 27 26 25
O3 O2 O1 O0

MBM27C512-25 (FUJITSU) (ACCESS TIME = 250nS)
C-MOS 512K (65,536x8 = 524,288)-BIT ERASABLE PROM
- TOP VIEW -

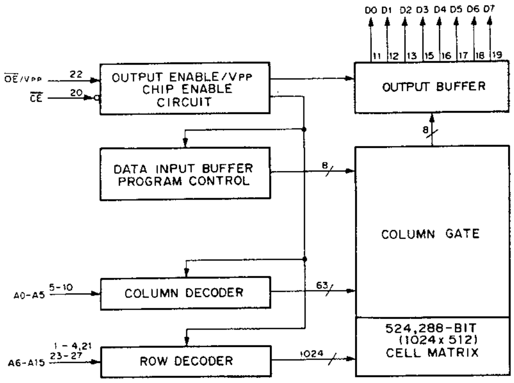

A15 1
A12 2
A7 3
A6 4
A5 5
A4 6
A3 7
A2 8
A1 9
A0 10
D0 11
D1 12
D2 13
14 GND
VDD (+5V) 28
27 A14
26 A13
25 A8
24 A9
23 A11
22 OE/VPP
21 A10
20 CE
19 D7
18 D6
17 D5
16 D4
15 D3


A15
A14
A13
A12
A11
A10
A9
A8
A7
A6
A5
A4
A3
A2
A1
A0
D7
D6
D5
D4
D3
D2
D1
D0
CE
OE/VPP
20
22

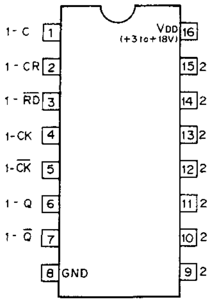
A0 – A15 : ADDRESS INPUTS
$\overline{\text{CE}}$: CHIP ENABLE INPUT
D0 – D7 : DATA OUTPUTS
$\overline{\text{OE}}$: OUTPUT ENABLE INPUT
V_{PP} : PROGRAM POWER SUPPLY

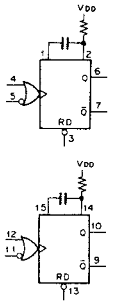
An	$\overline{\text{CE}}$	$\overline{\text{OE}}$/V_{PP}	V_{DD}	Dn	FUNCTION
A_{IN}	0	0	+5V	D_{OUT}	READ
A_{IN}	0	1	+5V	HI-Z	OUTPUT DISABLE
X	1	X	+5V	HI-Z	STANDBY
A_{IN}	0	+12.5V	+6V	D_{IN}	PGM
A_{IN}	0	0	+6V	D_{OUT}	PGM VERIFY
X	1	+12.5V	+6V	HI-Z	PGM INH

0 : LOW LEVEL
1 : HIGH LEVEL
X : DON'T CARE
HI-Z : HIGH IMPEDANCE


D0 D1 D2 D3 D4 D5 D6 D7
11 12 13 15 16 17 18 19
OE/VPP 22
CE 20
OUTPUT ENABLE/VPP CHIP ENABLE CIRCUIT
OUTPUT BUFFER
8
DATA INPUT BUFFER PROGRAM CONTROL
8
COLUMN GATE
A0-A5 5-10
COLUMN DECODER
63
A6-A15 1-4,21 23-27
ROW DECODER
1024
524,288-BIT (1024 x 512) CELL MATRIX

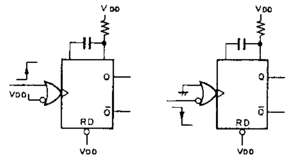
MC14538BCP (MOTOROLA)
TC4538BF (TOSHIBA) FLAT PACKAGE
TC4538BP (TOSHIBA)
C-MOS DUAL RETRIGGERABLE/NON-RETRIGGERABLE MONOSTABLE MULTIVIBRATOR
- TOP VIEW -


1-C 1
1-CR 2
1-RD 3
1-CK 4
1-CK 5
1-Q 6
1-Q 7
8 GND
VDD (+3 to +18V) 16
15 2-C
14 2-CR
13 2-RD
12 2-CK
11 2-CK
10 2-Q
9 2-Q

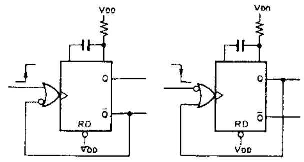

VDD
1
2
4
5
6
7
RD
3
VDD
15
14
12
11
10
9
RD
13

OUTPUT PULSE WIDTH=CR

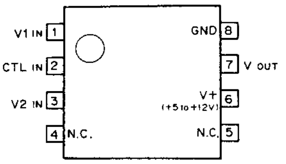
RETRIGGERABLE M.M.V

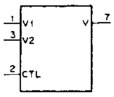

VDD
VDD
RD
VDD
VDD
RD
VDD

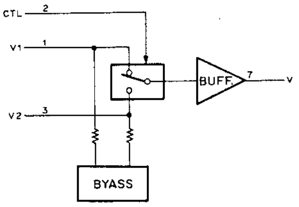
NON-RETRIGGERABLE M.M.V


VDD
RD
VDD
VDD
RD
VDD

NJM2233AM (JRC) FLAT PACKAGE
2-INPUT SIGNAL VIDEO SWITCH
- TOP VIEW -


V1 IN 1
CTL IN 2
V2 IN 3
4 N.C.
GND 8
7 V OUT
V+ (+5 to +12V) 6
N.C. 5

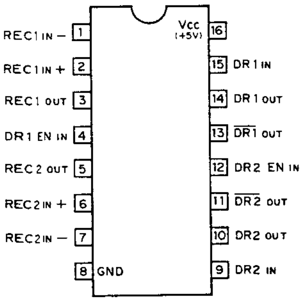

1 V1
3 V2
2 CTL
V 7


CTL 2
V1 1
V2 3
BUFF.
7
V
BYASS

CTL	V
0	V1
1	V2

0 : LOW LEVEL
1 : HIGH LEVEL

MC34051P (MOTOROLA)
RS-422 DRIVER/RECEIVER
— TOP VIEW —

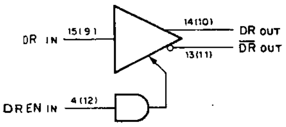

REC1 IN – 1
REC1 IN + 2
REC1 OUT 3
DR1 EN IN 4
REC2 OUT 5
REC2 IN + 6
REC2 IN – 7
8 GND
Vcc (+5V) 16
15 DR1 IN
14 DR1 OUT
13 DR1 OUT
12 DR2 EN IN
11 DR2 OUT
10 DR2 OUT
9 DR2 IN

DR EN	MODE
0	DISABLE
1	ENABLE

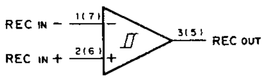
0 ; LOW LEVEL
1 ; HIGH LEVEL

DR ; DRIVER
DR EN ; DRIVER ENABLE
REC ; RECEIVER

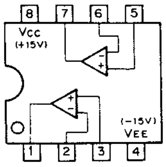
DRIVER CIRCUIT


DR IN 15(9)
14(10)
DR OUT
13(11)
DR OUT
DR EN IN 4(12)

RECEIVER CIRCUIT


REC IN – 1(7)
REC IN + 2(6)
3(5)
REC OUT

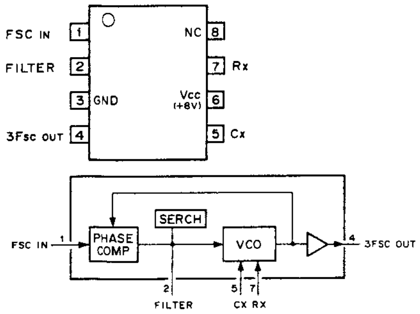
NJM4558M (JRC) FLAT PACKAGE
OPERATIONAL AMPLIFIER
- TOP VIEW -


8 7 6 5
Vcc (+15V)
(–15V) VEE
1 2 3 4

NJM2238M (JRC) FLAT PACKAGE

3-TIMES OSCILLATOR

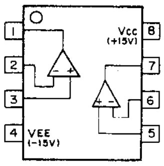
– TOP VIEW –


FSC IN 1
FILTER 2
3 GND
3Fsc OUT 4
NC 8
7 Rx
Vcc (+8V) 6
5 Cx
SERCH
PHASE COMP
VCO
FSC IN 1
4 3FSC OUT
2 FILTER
5 7 CX RX

NJM4562D (JRC)
NJM4562M (JRC) FLAT PACKAGE

OPERATIONAL AMPLIFIER

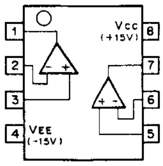
– TOP VIEW –


1
2
3
4 VEE (-15V)
Vcc (+15V) 8
7
6
5

RC4560DD (RAYTHEON)

OPERATIONAL AMPLIFIER

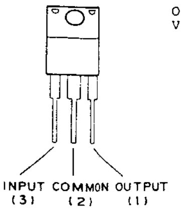
– TOP VIEW –


1
2
3
4 VEE (-15V)
Vcc (+15V) 8
7
6
5

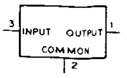
RC78M ? ? FA (RAYTHEON)
RC78 ? ? FA (RAYTHEON)

POSITIVE VOLTAGE REGULATOR

– FRONT VIEW –

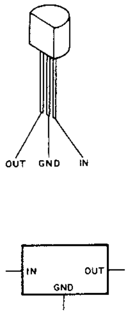

INPUT COMMON OUTPUT
(3) (2) (1)

OUTPUT VOLTAGE	RC78M??FA	RC78??FA
+5V	RC78M05FA	RC7805FA
+6V	RC78M06FA	RC7806FA
+8V	---------	RC7808FA
+9V	RC78M09FA	RC7809FA
+12V	RC78M12FA	RC7812FA
+15V	RC78M15FA	RC7815FA
+18V	---------	RC7818FA
+20V	---------	RC7820FA
+24V	---------	RC7824FA


3 INPUT
OUTPUT 1
COMMON
2

RC78L ? ? A (RAYTHEON)

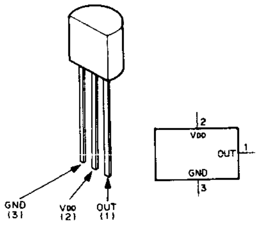
POSITIVE VOLTAGE REGULATOR (100mA)


OUT GND IN
IN
OUT
GND

OUTPUT VOLTAGE	RC78L??A
+2.6V	RC78L02A
+4V	--------
+5V	RC78L05A
+6V	RC78L06A
+6.2V	--------
+7V	--------
+8V	RC78L08A
+8.2V	--------
+9V	RC78L09A
+10V	--------
+12V	RC78L12A
+15V	RC78L15A
+18V	RC78L18A
+20V	RC78L20A
+24V	RC78L24A

S-8054ALB (SEIKO)

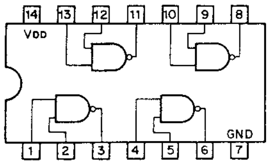
C-MOS VOLTAGE DETECTOR

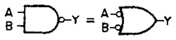

GND (3)
VDD (2)
OUT (1)
2
VDD
OUT 1
GND
3

SN74HC00NS (TI) (V_{DD} = +2 to +6V) FLAT PACKAGE

C-MOS QUAD 2-INPUT NAND GATE

– TOP VIEW –


14 13 12 11 10 9 8
VDD
GND
1 2 3 4 5 6 7



Y = $\overline{A \cdot B} = \overline{A} + \overline{B}$

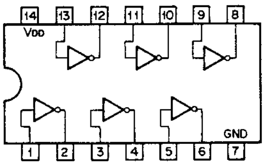
A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

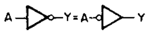
0; LOW LEVEL
1; HIGH LEVEL

SN74HC04N (TI) (V_{DD} = +2 to +6V)
TC74HC04F (TOSHIBA) (V_{DD} = +2 to +6V) FLAT PACKAGE

C-MOS HEX INVERTER

– TOP VIEW –


14 13 12 11 10 9 8
VDD
GND
1 2 3 4 5 6 7



Y = $\overline{A}$

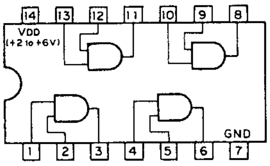
A	Y
0	1
1	0

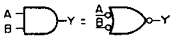
0: LOW LEVEL
1: HIGH LEVEL

SN74HC08N (TI)

C-MOS QUAD 2-INPUT AND GATE

– TOP VIEW –


14 13 12 11 10 9 8
VDD (+2 to +6V)
GND
1 2 3 4 5 6 7

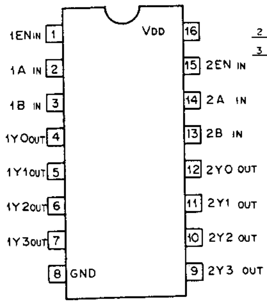


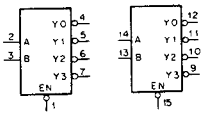
Y = A · B = $\overline{\overline{A} + \overline{B}}$

A	B	Y
0	0	0
0	1	0
1	0	0
1	1	1

0; LOW LEVEL
1; HIGH LEVEL

SN74HC139N (TI) (V_{DD} = + 2 to + 6V)
C-MOS 1-OF-4 DECODER/DEMULTIPLEXER
– TOP VIEW –

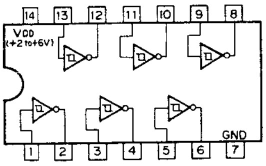

1EN IN 1
1A IN 2
1B IN 3
1Y0 OUT 4
1Y1 OUT 5
1Y2 OUT 6
1Y3 OUT 7
8 GND
VDD 16
15 2EN IN
14 2A IN
13 2B IN
12 2Y0 OUT
11 2Y1 OUT
10 2Y2 OUT
9 2Y3 OUT

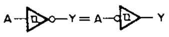

2 A
3 B
Y0 4
Y1 5
Y2 6
Y3 7
EN
1
14 A
13 B
Y0 12
Y1 11
Y2 10
Y3 9
EN
15

INPUTS			OUTPUTS			
EN	B	A	Y3	Y2	Y1	Y0
0	0	0	1	1	1	0
0	0	1	1	1	0	1
0	1	0	1	0	1	1
0	1	1	0	1	1	1
1	X	X	1	1	1	1

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

SN74HC14N (TI)
SN74HC14NS (TI) FLAT PACKAGE
C-MOS SCHMITT TRIGGER INVERTER
– TOP VIEW –

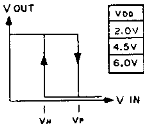

14
13
12
11
10
9
8
VDD
(+2 to+6V)
GND
1
2
3
4
5
6
7



$Y = \overline{A}$

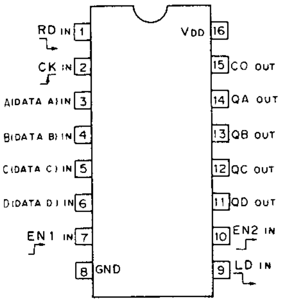
A	Y
0	1
1	0

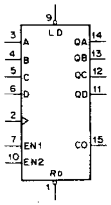
0 ; LOW LEVEL
1 ; HIGH LEVEL



VDD	V_N	V_P
2.0V	0.75V	1.25V
4.5V	1.9V	2.7V
6.0V	2.6V	3.6V

SN74HC163NS (TI) (V_{DD} = + 2 to + 6V) FLAT PACKAGE
C-MOS PRESETTABLE SYNCHRONOUS 4-BIT BINARY COUNTER
– TOP VIEW –

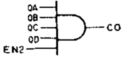

RD IN 1
CK IN 2
A(DATA A) IN 3
B(DATA B) IN 4
C(DATA C) IN 5
D(DATA D) IN 6
EN1 IN 7
8 GND
VDD 16
15 CO OUT
14 QA OUT
13 QB OUT
12 QC OUT
11 QD OUT
10 EN2 IN
9 LD IN


9
LD
3 A
4 B
5 C
6 D
2
7 EN1
10 EN2
RD
1
QA 14
QB 13
QC 12
QD 11
CO 15

MODE SELECTION

CONTROL INPUTS				MODE
RD	LD	EN1	EN2	
0	X	X	X	RESET (SYNCHRONOUS)
1	0	X	X	PRESET (SYNCHRONOUS)
1	1	0	X	NO COUNT
1	1	X	0	NO COUNT
1	1	1	1	COUNT

CARRY OUTPUT "CO"

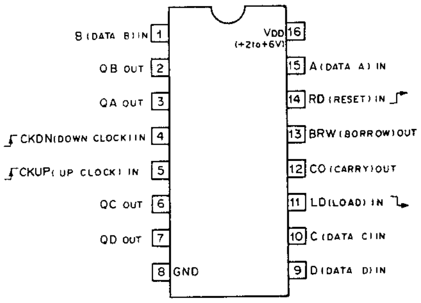

QA
QB
QC
QD
EN2
CO

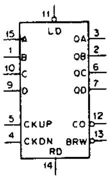
CO IS HIGH WHEN EN2 INPUT IS HIGH AND COUNT IS "15".

COUNT SEQUENCE

COUNT	OUTPUTS			
	QD	QC	QB	QA
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1

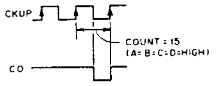
SN74HC193N (TI)
C-MOS PRESETTABLE SYNCHRONOUS 4-BIT UP/DOWN COUNTER
— TOP VIEW —


B (DATA B) IN 1
QB OUT 2
QA OUT 3
CKDN(DOWN CLOCK) IN 4
CKUP(UP CLOCK) IN 5
QC OUT 6
QD OUT 7
8 GND
VDD 16
(+2to+6V)
15 A (DATA A) IN
14 RD (RESET) IN
13 BRW (BORROW) OUT
12 CO (CARRY) OUT
11 LD(LOAD) IN
10 C (DATA C) IN
9 D (DATA D) IN

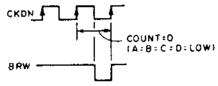

11
LD
15 A
1 B
10 C
9 D
5 CKUP
4 CKDN
RD
14
QA 3
QB 2
QC 6
QD 7
CO 12
BRW 13

CONTROL INPUT				MODE
RD	LD	CKUP	CKDN	
1	X	X	X	RESET TO ZERO
0	0	X	X	PRESET
0	1	↑	1	UP COUNT
0	1	1	↑	DOWN COUNT
0	1	1	1	NO COUNT

$CO = \overline{\overline{CKUP}\cdot QA\cdot QB\cdot QC\cdot QD}$


CKUP
COUNT = 15
(A=B=C=D=HIGH)
CO

$BRW = \overline{\overline{CKDN}\cdot\overline{QA}\cdot\overline{QB}\cdot\overline{QC}\cdot\overline{QD}}$

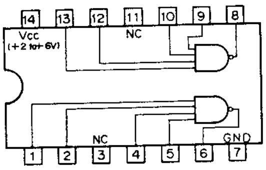

CKDN
COUNT=0
(A=B=C=D=LOW)
BRW

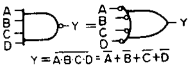
COUNT	OUTPUT			
	QD	QC	QB	QA
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1

UP COUNT
DOWN COUNT

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

SN74HC20N (TI)
C-MOS 4-INPUT POSITIVE-NAND GATE
– TOP VIEW –


14
13
12
11
10
9
8
Vcc
(+2 to+6V)
NC
NC
GND
1
2
3
4
5
6
7

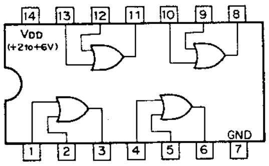

A
B
C
D
Y =
A
B
C
D
Y

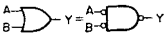
$Y=\overline{A\cdot B\cdot C\cdot D}=\overline{A}+\overline{B}+\overline{C}+\overline{D}$

A	B	C	D	Y
0	0	0	0	1
0	0	0	1	1
0	0	1	0	1
0	0	1	1	1
0	1	0	0	1
⋮	⋮	⋮	⋮	⋮
1	1	0	1	1
1	1	1	0	1
1	1	1	1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL

SN74HC32N (TI)
C-MOS 2-INPUT OR GATE
– TOP VIEW –


14
13
12
11
10
9
8
VDD
(+2to+6V)
GND
1
2
3
4
5
6
7

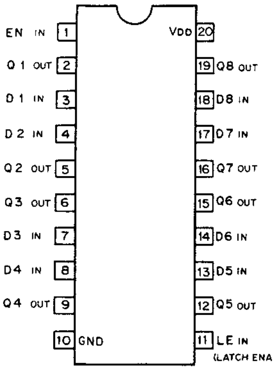


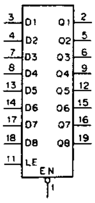
$Y = A+B=\overline{\overline{A}\cdot\overline{B}}$

A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1

0 : LOW LEVEL
1 : HIGH LEVEL

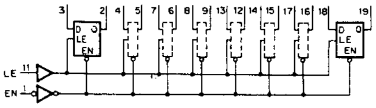
SN74HC373N (TI) (V_{DD} = +2 to +6V)
C-MOS 3-STATE OUTPUTS OCTAL LATCHES
– TOP VIEW –


EN IN 1
Q 1 OUT 2
D 1 IN 3
D 2 IN 4
Q 2 OUT 5
Q 3 OUT 6
D 3 IN 7
D 4 IN 8
Q 4 OUT 9
10 GND
VDD 20
19 Q8 OUT
18 D8 IN
17 D7 IN
16 Q7 OUT
15 Q6 OUT
14 D6 IN
13 D5 IN
12 Q5 OUT
11 LE IN
(LATCH ENABLE)

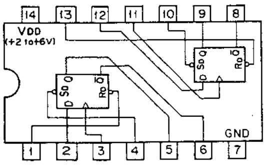

D1 Q1
D2 Q2
D3 Q3
D4 Q4
D5 Q5
D6 Q6
D7 Q7
D8 Q8
LE
EN

INPUTS			OUT
EN	D	LE	Q
0	1	1	1
0	0	1	0
0	X	0	Qo
1	X	X	HI-Z

HI-Z;
HIGH IMPEDANCE
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE


LE 11
EN 1
D Q
LE
EN

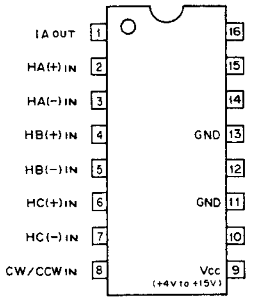
SN74HC74N (TI)
SN74HC74NS (TI) FLAT PACKAGE
C-MOS D-TYPE FLIP FLOP WITH DIRECT SET/RESET
– TOP VIEW –

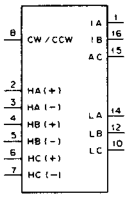

VDD
(+2 to+6V)
GND
SD
RD

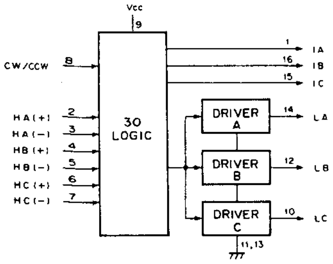
INPUTS				OUTPUTS	
$\overline{S_D}$	$\overline{R_D}$	CK	D	Qn+1	$\overline{Qn+1}$
0	1	X	X	1	0
1	0	X	X	0	1
0	0	X	X	1	1
1	1	↑	1	1	0
1	1	↑	0	0	1
1	1	0	X	Qn	$\overline{Qn}$

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

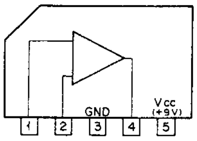
TA7745F (TOSHIBA) FLAT PACKAGE
DC MOTOR DRIVER
– TOP VIEW –


IA OUT 1
HA(+) IN 2
HA(–) IN 3
HB(+) IN 4
HB(–) IN 5
HC(+) IN 6
HC(–) IN 7
CW/CCW IN 8
16 IB OUT
15 IC OUT
14 LA OUT
GND 13
12 LB OUT
GND 11
10 LC OUT
Vcc 9
(+4V to +15V)

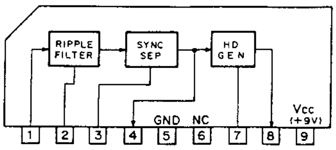

CW/CCW
HA(+)
HA(–)
HB(+)
HB(–)
HC(+)
HC(–)
IA
IB
AC
LA
LB
LC


Vcc
CW/CCW
HA(+)
HA(–)
HB(+)
HB(–)
HC(+)
HC(–)
30 LOGIC
DRIVER A
DRIVER B
DRIVER C
IA
IB
IC
LA
LB
LC
11,13

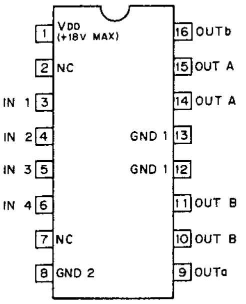
TA7060AP (TOSHIBA)
LINEAR AMP
— SIDE VIEW —

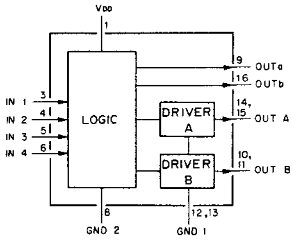

GND
Vcc
(+9V)
1
2
3
4
5

TA7357AP (TOSHIBA)
SYNC SEPARATOR/HD PULSE GENERATOR
— SIDE VIEW —


RIPPLE FILTER
SYNC SEP
HD GEN
GND
NC
Vcc
(+9V)

TA7733F (TOSHIBA) FLAT PACKAGE
FUNCTIONABLE BRIDGE DRIVER
– TOP VIEW –

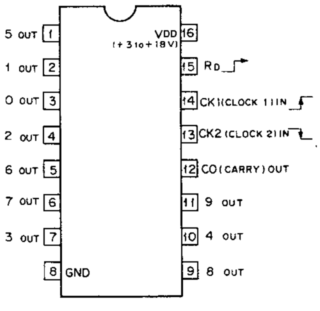

1 VDD (+18V MAX)
2 NC
IN 1 3
IN 2 4
IN 3 5
IN 4 6
7 NC
8 GND 2
16 OUTb
15 OUT A
14 OUT A
GND 1 13
GND 1 12
11 OUT B
10 OUT B
9 OUTa

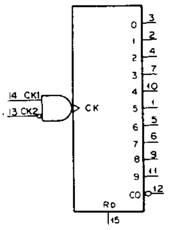

VDD
IN 1
IN 2
IN 3
IN 4
LOGIC
DRIVER A
DRIVER B
OUTa
OUTb
OUT A
OUT B
GND 2
GND 1

CONTROL	INPUTS				OUTPUTS				MODE
	IN1	IN2	IN3	IN4	OUTA	OUTB	OUTa	OUTb	
2-INPUT CONTROL	1	0	1	1	ON	–	ON	–	FWD
	0	1	1	1	–	ON	–	ON	REV
	1	1	1	1	ON	ON	–	–	BRAKE
	0	0	1	1	–	–	–	–	STOP
1-INPUT CONTROL	1	0	0	1	ON	–	ON	–	A ON
	0	0	0	1	–	ON	–	ON	B ON
	X	1	0	1	ON	ON	–	–	AB ON
				0	–	–	–	–	INHIBIT

0 : LOW LEVEL
1 : HIGH LEVEL
X : DON'T CARE

TC4017BP (TOSHIBA)
C-MOS DECADE COUNTER/DIVIDER
— TOP VIEW —

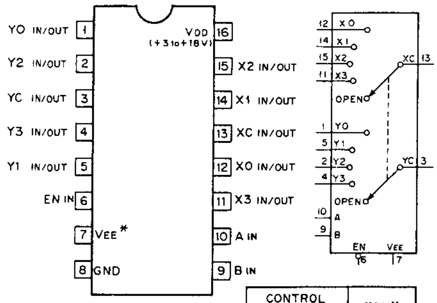

5 OUT 1
1 OUT 2
0 OUT 3
2 OUT 4
6 OUT 5
7 OUT 6
3 OUT 7
8 GND
VDD 16
(+3 to +18V)
15 RD
14 CK1(CLOCK 1) IN
13 CK2 (CLOCK 2) IN
12 CO (CARRY) OUT
11 9 OUT
10 4 OUT
9 8 OUT


14 CK1
13 CK2
CK
RD
CO

COUNT	INPUTS		OUTPUTS										
	RD	CK=CK1·$\overline{CK2}$	9	8	7	6	5	4	3	2	1	0	CO
0	1	X	0	0	0	0	0	0	0	0	0	1	1
0	0	↑	0	0	0	0	0	0	0	0	0	1	1
1	0	↑	0	0	0	0	0	0	0	0	1	0	1
2	0	↑	0	0	0	0	0	0	0	1	0	0	1
3	0	↑	0	0	0	0	0	0	1	0	0	0	1
4	0	↑	0	0	0	0	0	1	0	0	0	0	1
5	0	↑	0	0	0	0	1	0	0	0	0	0	0
6	0	↑	0	0	0	1	0	0	0	0	0	0	0
7	0	↑	0	0	1	0	0	0	0	0	0	0	0
8	0	↑	0	1	0	0	0	0	0	0	0	0	0
9	0	↑	1	0	0	0	0	0	0	0	0	0	0
NO COUNT	0	1	NO CHANGE										
	0	0											

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

TC4052BFHB (TOSHIBA) FLAT PACKAGE
C-MOS DUAL 4-CHANNEL ANALOG MULTIPLEXER/DEMULTIPLEXER
– TOP VIEW –

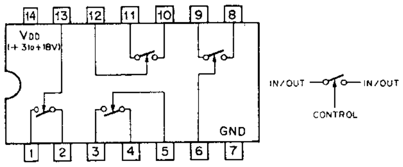

YO IN/OUT 1
Y2 IN/OUT 2
YC IN/OUT 3
Y3 IN/OUT 4
Y1 IN/OUT 5
EN IN 6
7 VEE*
8 GND
VDD (+3 to +18V) 16
15 X2 IN/OUT
14 X1 IN/OUT
13 XC IN/OUT
12 XO IN/OUT
11 X3 IN/OUT
10 A IN
9 B IN
XO
X1
X2
X3
XC 13
OPEN
YO
Y1
Y2
Y3
YC 3
OPEN
A
B
EN 6
VEE 7

VEE*; VDD – VEE = +3 to +18V

CONTROL INPUTS			"ON" CHANNEL
EN	B	A	
0	0	0	0
0	0	1	1
0	1	0	2
0	1	1	3
1	X	X	OPEN

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE.

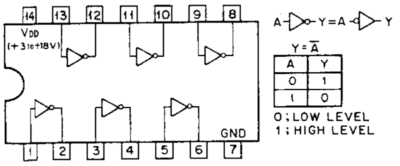
TC4066BF (TOSHIBA) FLAT PACKAGE
C-MOS BILATERAL ANALOG SWITCH
– TOP VIEW –


14 13 12 11 10 9 8
VDD (+3 to +18V)
GND
1 2 3 4 5 6 7
IN/OUT
IN/OUT
CONTROL

CONTROL	SWITCH
0	OFF
1	ON

0; LOW LEVEL
1; HIGH LEVEL

TC4069UBP (TOSHIBA)
C-MOS INVERTER
— TOP VIEW —

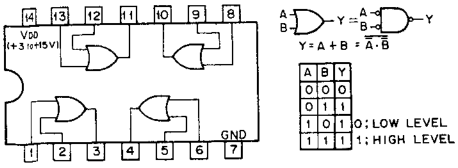

14 13 12 11 10 9 8
VDD (+3 to +18V)
GND
1 2 3 4 5 6 7
A Y = A Y

$Y = \overline{A}$

A	Y
0	1
1	0

0; LOW LEVEL
1; HIGH LEVEL

TC4071 BP (TOSHIBA)
C-MOS 2-INPUT OR GATE
— TOP VIEW —

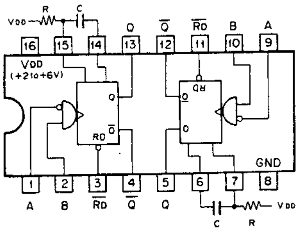

14 13 12 11 10 9 8
VDD (+3 to +15V)
GND
1 2 3 4 5 6 7
A
B
Y
A
B
Y

$Y = A + B = \overline{\overline{A} \cdot \overline{B}}$

A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1

0; LOW LEVEL
1; HIGH LEVEL

TC74HC123F (TOSHIBA) FLAT PACKAGE
C-MOS DUAL RETRIGGERABLE MONOSTABLE MULTIVIBRATOR
– TOP VIEW –

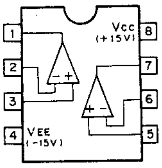

VDD
R
C
Q
Q̄
R̄D
B
A
16 15 14 13 12 11 10 9
VDD (+2 to +6V)
Q
RD
Q̄
Q
RD
Q
GND
1 2 3 4 5 6 7 8
A B R̄D Q̄ Q
C R VDD

INPUT			OUTPUT	
R̄D	A	B	Q	Q̄
0	X	X	0	1
1	1	X	0	1
1	X	0	0	1
1	0	↑	⊓	⊔
1	↓	1	⊓	⊔
↑	0	1	⊓	⊔

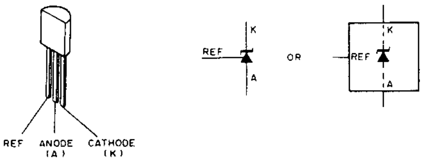
0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

OUTPUT PULSE WIDTH = 0.46CR

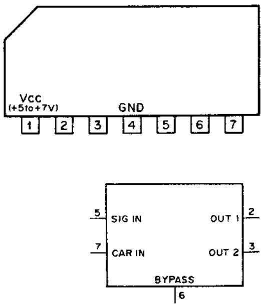
TL082CP (TI)
OPERATIONAL AMPLIFIER
(J FET-INPUT)
— TOP VIEW —


1
2
3
4
VEE (-15V)
Vcc (+15V)
8
7
6
5

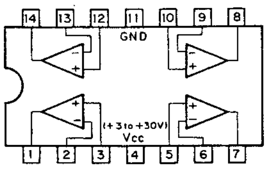
TL431CLP (TI)
ADJUSTABLE PRECISION SHUNT REGULATOR


REF
ANODE (A)
CATHODE (K)
REF
K
A
OR
REF
K
A

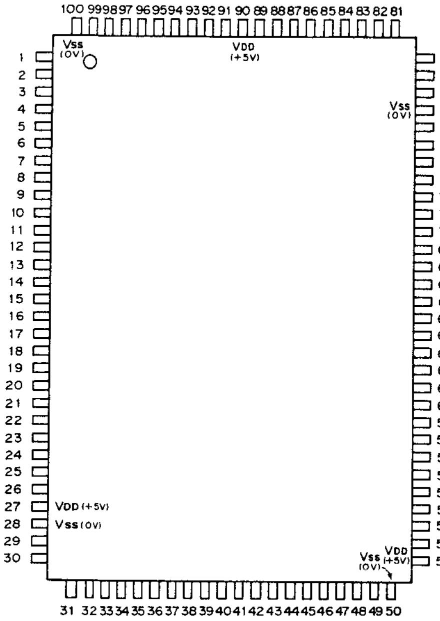
uPC1037HA (NEC)
DOUBLE-BALANCED MODULATOR
— SIDE VIEW —


Vcc (+5 to +7V)
GND
1 2 3 4 5 6 7
5 SIG IN
7 CAR IN
OUT 1 2
OUT 2 3
BYPASS 6

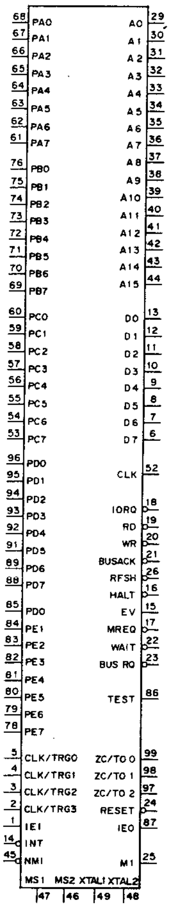
uPC324G2 (NEC) FLAT PACKAGE
QUAD. OP AMPLIFIER
— TOP VIEW —


14 13 12 11 10 9 8
GND
(+3 to +30V) Vcc
1 2 3 4 5 6 7

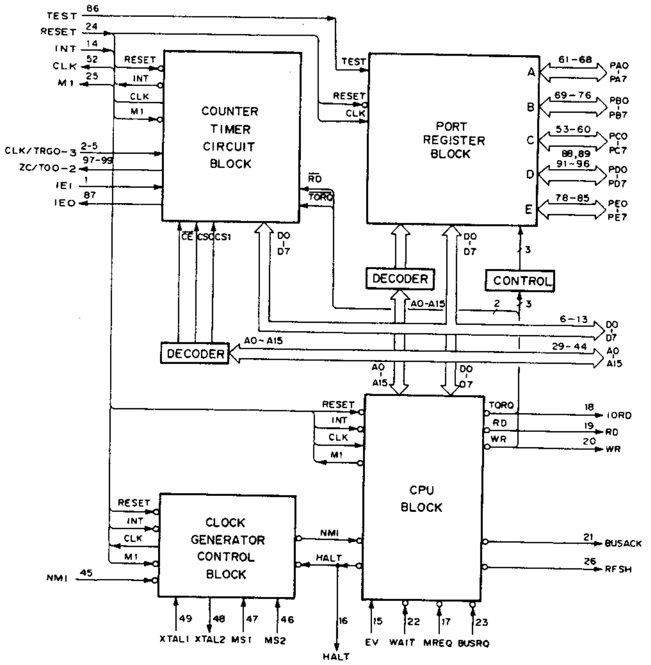
TMPZ84C011AF (TOSHIBA)
C-MOS 8 BIT MICROPROCESSOR
— TOP VIEW —


Vss (0V)
VDD (+5V)
Vss (0V)
VDD (+5V)
Vss (0V)
VDD (+5V)
Vss (0V)

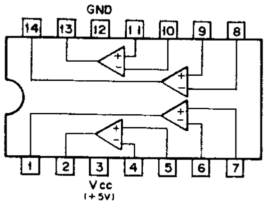
NO.	IN	OUT	SYMBOL	NO.	IN	OUT	SYMBOL
1	○		IEI	51			Vcc
2	○		CLK/TRG3	52		○	CLK
3	○		CLK/TRG2	53	○	○	PC7
4	○		CLK/TRG1	54	○	○	PC6
5	○		CLK/TRG0	55	○	○	PC5
6	○	○	D7	56	○	○	PC4
7	○	○	D6	57	○	○	PC3
8	○	○	D5	58	○	○	PC2
9	○	○	D4	59	○	○	PC1
10	○	○	D3	60	○	○	PC0
11	○	○	D2	61	○	○	PA7
12	○	○	D1	62	○	○	PA6
13	○	○	D0	63	○	○	PA5
14	○		$\overline{INT}$	64	○	○	PA4
15	○		EV	65	○	○	PA3
16		○	$\overline{HALT}$	66	○	○	PA2
17		○	$\overline{MREQ}$	67	○	○	PA1
18		○	$\overline{IORQ}$	68	○	○	PA0
19		○	$\overline{RD}$	69	○	○	PB7
20		○	$\overline{WR}$	70	○	○	PB6
21		○	$\overline{BUSACK}$	71	○	○	PB5
22	○		$\overline{WAIT}$	72	○	○	PB4
23	○		$\overline{BUSREQ}$	73	○	○	PB3
24	○		$\overline{RESET}$	74	○	○	PB2
25		○	$\overline{M1}$	75	○	○	PB1
26		○	$\overline{RFSH}$	76	○	○	PB0
27			Vcc	77			Vss
28			Vss	78	○	○	PE7
29		○	A0	79	○	○	PE6
30		○	A1	80	○	○	PE5
31		○	A2	81	○	○	PE4
32		○	A3	82	○	○	PE3
33		○	A4	83	○	○	PE2
34		○	A5	84	○	○	PE1
35		○	A6	85	○	○	PE0
36		○	A7	86	○		TEST
37		○	A8	87		○	IEO
38		○	A9	88	○	○	PD7
39		○	A10	89	○	○	PD6
40		○	A11	90			Vcc
41		○	A12	91	○	○	PD5
42		○	A13	92	○	○	PD4
43		○	A14	93	○	○	PD3
44		○	A15	94	○	○	PD2
45	○		$\overline{NMI}$	95	○	○	PD1
46	○		MS2	96	○	○	PD0
47	○		MS1	97		○	ZC/TO2
48		○	XTAL2	98		○	ZC/TO1
49	○		XTAL1	99		○	ZC/TO0
50			Vss	100			Vss


PA0
PA1
PA2
PA3
PA4
PA5
PA6
PA7
PB0
PB1
PB2
PB3
PB4
PB5
PB6
PB7
PC0
PC1
PC2
PC3
PC4
PC5
PC6
PC7
PD0
PD1
PD2
PD3
PD4
PD5
PD6
PD7
PE0
PE1
PE2
PE3
PE4
PE5
PE6
PE7
CLK/TRG0
CLK/TRG1
CLK/TRG2
CLK/TRG3
IEI
INT
NMI
MS1
MS2
XTAL1
XTAL2
A0
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
A13
A14
A15
D0
D1
D2
D3
D4
D5
D6
D7
CLK
IORQ
RD
WR
BUSACK
RFSH
HALT
EV
MREQ
WAIT
BUS RQ
TEST
ZC/TO 0
ZC/TO 1
ZC/TO 2
RESET
IEO
M1

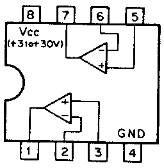
A0–A15 ; 3-STATE ADDRESS BUS OUTPUTS
BUSACK ; BUS ACKNOWLEDGE OUTPUT
BUS REQ ; BUS REQUEST INPUT
CLK ; CLOCK OUTPUT
CLK/TRG0–3 ; EXTERNAL CLOCK / TIMER TRIGGER0–3 INPUTS
D0–D7 ; 3-STATE DATA BUS INPUTS/OUTPUTS
EV ; EVALUATER INPUT
HALT ; HALT OUTPUT
IEI/IEO ; CTC INTERRUPT ENABLE INPUT/OUTPUT
INT ; MASKABLE INTERRUPT REQUEST INPUT
IORQ ; 3-STATE I/O REQUEST OUTPUT
M1 ; 3-STATE MACHINE CYCLE 1 OUTPUT
MREQ ; 3-STATE REQUEST OUTPUT
MS1/MS2 ; MODE SELECT 1/2 INPUTS
NMI ; NON-MASKABLE INTERRUPT REQUEST INPUT
PA0–PA7 ;
PB0–PB7 ;
PC0–PC7 ; } 3-STATE I/O PORT
PD0–PD7 ;
PE0–PE7 ;
RD ; 3-STATE READ OUTPUT
RESET ; RESET INPUT
RFSH ; REFRESH OUTPUT
TEST ; TEST INPUT
WAIT ; WAIT REQUEST INPUT
WR ; 3-STATE WRITE OUTPUT
ZC/TO0–2 ; ZERO COUNT/TIME OUT 0–2 OUTPUTS


TEST
RESET
INT
CLK
M1
CLK/TRG0–3
ZC/TO0–2
IEI
IEO
COUNTER TIMER CIRCUIT BLOCK
CE CS0 CS1
D0 D7
RD
TORQ
PORT REGISTER BLOCK
A B C D E
61–68 PA0 PA7
69–76 PB0 PB7
53–60 PC0 PC7
88,89 91–96 PD0 PD7
78–85 PE0 PE7
DECODER
CONTROL
A0–A15
6–13 D0 D7
29–44 A0 A15
DECODER
CPU BLOCK
IORQ
RD
WR
BUSACK
RFSH
CLOCK GENERATOR CONTROL BLOCK
NMI
HALT
XTAL1 XTAL2 MS1 MS2
EV WAIT MREQ BUSRQ

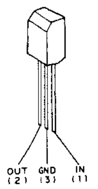
uPC339C (NEC)
COMPARATOR
- TOP VIEW -


GND
14 13 12 11 10 9 8
1 2 3 4 5 6 7
Vcc (+5V)

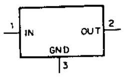
uPC358C (NEC)
uPC358G2 (NEC) FLAT PACKAGE
DUAL OPERATIONAL AMPLIFIERS
— TOP VIEW —


8 7 6 5
Vcc (+3 to +30V)
GND
1 2 3 4

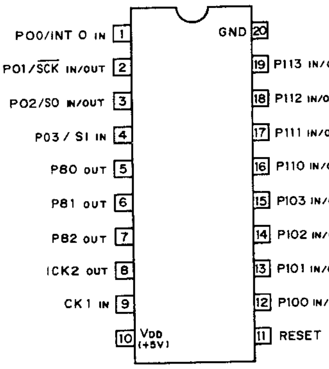
uPC78L ? ?A (NEC)
POSITIVE VOLTAGE REGULATOR (100mA)

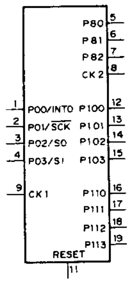

OUT (2)
GND (3)
IN (1)

OUTPUT VOLTAGE	uPC78L??	UPC78L??A
5V	uPC78L05	uPC78L05A
6V		
8V	uPC78L08	
9V		
12V	uPC78L12	
15V	uPC78L15	

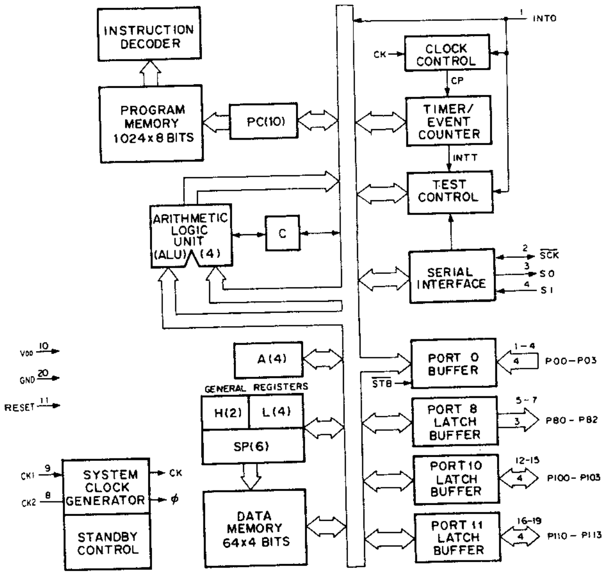

1
IN
OUT
2
GND
3

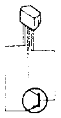
uPD7564 (NEC)
C-MOS SINGLE CHIP 4-BIT MICROCOMPUTER
– TOP VIEW –

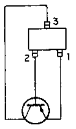

P00/INT 0 IN 1
P01/SCK IN/OUT 2
P02/SO IN/OUT 3
P03 / SI IN 4
P80 OUT 5
P81 OUT 6
P82 OUT 7
ICK2 OUT 8
CK1 IN 9
10 VDD (+5V)
GND 20
19 P113 IN/OUT
18 P112 IN/OUT
17 P111 IN/OUT
16 P110 IN/OUT
15 P103 IN/OUT
14 P102 IN/OUT
13 P101 IN/OUT
12 P100 IN/OUT
11 RESET


P80 5
P81 6
P82 7
CK2 8
1 P00/INTO
2 P01/SCK
3 P02/SO
4 P03/SI
9 CK1
P100 12
P101 13
P102 14
P103 15
P110 16
P111 17
P112 18
P113 19
RESET
11

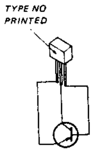
CK1, CK2 : SYSTEM CLOCK INPUTS
INTO : TESTABLE INPUT
P00 – P03 : PORT 0 INPUTS/OUTPUTS
P80 – P82 : PORT 8 OUTPUTS
P100 – P103 : PORT 10 INPUTS/OUTPUTS
P110 – P113 : PORT 11 INPUTS/OUTPUTS
RESET : RESET INPUT
SCK : SERIAL CLOCK INPUT/OUTPUT
SI : SERIAL DATA INPUT
SO : SERIAL DATA OUTPUT

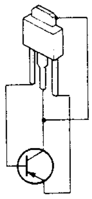

INSTRUCTION DECODER
PROGRAM MEMORY 1024x8 BITS
PC(10)
ARITHMETIC LOGIC UNIT (ALU) (4)
C
1 INTO
CK
CLOCK CONTROL
CP
TIMER/ EVENT COUNTER
INTT
TEST CONTROL
SERIAL INTERFACE
2 SCK
3 SO
4 SI
VDD 10
GND 20
RESET 11
A(4)
GENERAL REGISTERS
H(2)
L(4)
SP(6)
STB
PORT 0 BUFFER
1-4
4
P00-P03
PORT 8 LATCH BUFFER
5-7
3
P80-P82
PORT 10 LATCH BUFFER
12-15
4
P100-P103
PORT 11 LATCH BUFFER
16-19
4
P110-P113
CK1 9
CK2 8
SYSTEM CLOCK GENERATOR
CK
ϕ
STANDBY CONTROL
DATA MEMORY 64x4 BITS

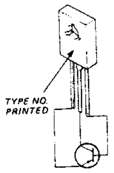

2SA1115

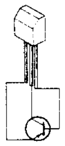


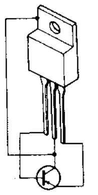
2SA1122
2SA1162
2SA1226
2SA812

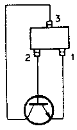

TYPE NO PRINTED
2SA1175


2SA1385

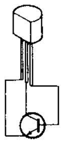

TYPE NO. PRINTED
2SB649A

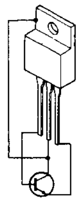

2SB733

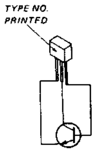

2SB856

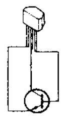


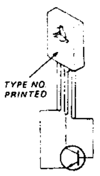
TOP VIEW (SCALE 4/1)
2SC1623
2SC2223
2SC3326N

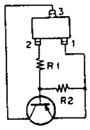

2SC1815
2SC2878


2SC1826


TYPE NO. PRINTED
2SC2785

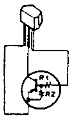

2SC3327
2SC403SP


TYPE NO. PRINTED
2SD669A



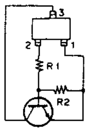
TOP VIEW (SCALE 4/1)
DTA114EK (R1 = 10K, R2 = 10K)
DTA124EK (R1 = 22K, R2 = 22K)
DTA144EK (R1 = 47K, R2 = 47K)

TRANSISTOR, DIODE

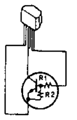


DTA124XS (R1=22K, R2=47K)
DTA143XS (R1=4.7K, R2=10K)
DTA144ES (R1=47K, R2=47K)

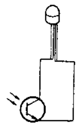
TOP VIEW (SCALE 4/1)



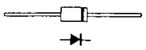
DTC114EK (R1 = 10K, R2 = 10K)
DTC124EK (R1 = 22K, R2 = 22K)
DTC144EK (R1 = 47K, R2 = 47K)



DTC144ES (R1=47K, R2=47K)

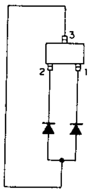


NJL7141E

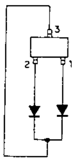


10E-2
1SS119
1SS133

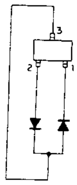
TOP VIEW (SCALE 4/1) 1S2835



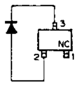
TOP VIEW (SCALE 4/1) 1S2837



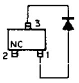
TOP VIEW (SCALE 4/1) 1SS123

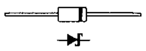


TOP VIEW (SCALE 4/1) 1SS193

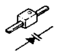


TOP VIEW (SCALE 4/1) 1SS196



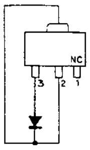


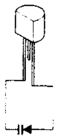
1SS97
1SS99



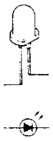
1T33C

TOP VIEW (SCALE 4/1) *E10DS2*



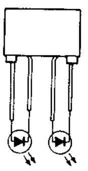


FC54M



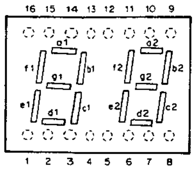
GL-5HD5 ; RED

– SIDE VIEW –
(SCALE 2/1)

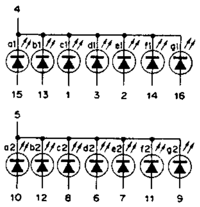


LT-9200D ; RED
LT-9200H ; YELLOW

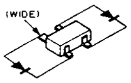
DUAL 7-SEGMENT LED
— TOP VIEW —


16 15 14 13 12 11 10 9
a1
a2
f1
b1
f2
b2
g1
g2
e1
c1
e2
c2
d1
d2
1 2 3 4 5 6 7 8

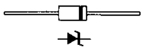
LB402VK (ROHM)


4
a1
b1
c1
d1
e1
f1
g1
15 13 1 3 2 14 16
5
a2
b2
c2
d2
e2
f2
g2
10 12 8 6 7 11 9

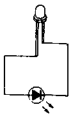
(SCALE 3/1)



MA159

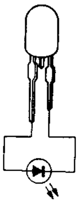


RD??ESB?

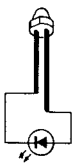


TLG124A ; GREEN

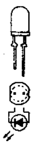
(SCALE 2/1)



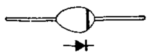
TLG256 ; GREEN
TLY256 ; YELLOW



TLUG144 ; GREEN
TLUY144 ; YELLOW



TLUG154 ; GREEN



U05E

SECTION 13
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

CIRCUIT FUNCTION OF THE PRINTED CIRCUIT BOARDS

SYSTEM	BOARD	CIRCUIT FUNCTION
VIDEO	YC-39	YC Separator
	VO-24	Video Interface
AUDIO	AU-127	Audio Input/Output Amp
	AA-16	XLR Input/Output Amp
SYSCON	SY-145	System Control
	KY-162	Function Key Board
	DP-101	Display
	DD-12	Display Drive
	PTC-32	Search Dial
DIGITAL PROCESS	DI-11	Digital CNR
	*DUS-309	Read Timing Control Pulse Generator
Others	LP-52	Mode Display
	CP-141	Connector Panel
	SW-346	Audio Level Control
	SW-347	Audio select SW
	SW-348	Remote Panel SW
	MC-28	Mic. Jack
	HP-42	Head phones Level
	MT-57	Audio Meter Level
	RM-66	9-pin Connector

* DUS-309 Board is Used for Serial No up to 10340.

Mechanical deck

SYSTEM	BOARD	CIRCUIT FUNCTION
VIDEO	FR-40	Head Amp/Flying Erase
	HK-4	Y/C Video process
	RP-73	REC/PB Head Amp
AUDIO	MB-19	PCM Audio
	PA-27	PCM Audio Analog
	PD-19	PCM Audio Digital
SYSCON SERVO	TS-74	Tape Top/End Sensor
	IG-4	Terminal
	LD-1	Tape Sensor
	MS-4	Mode Switch
	LS-9	Loading Switch
	RS-31	Mechanism Control
	MD-23	Capstan/Drum Drive
	SE-10	Servo, Syscon
Others	FP-84	Connection
	FP-206	Connection
	FP-122	Connection

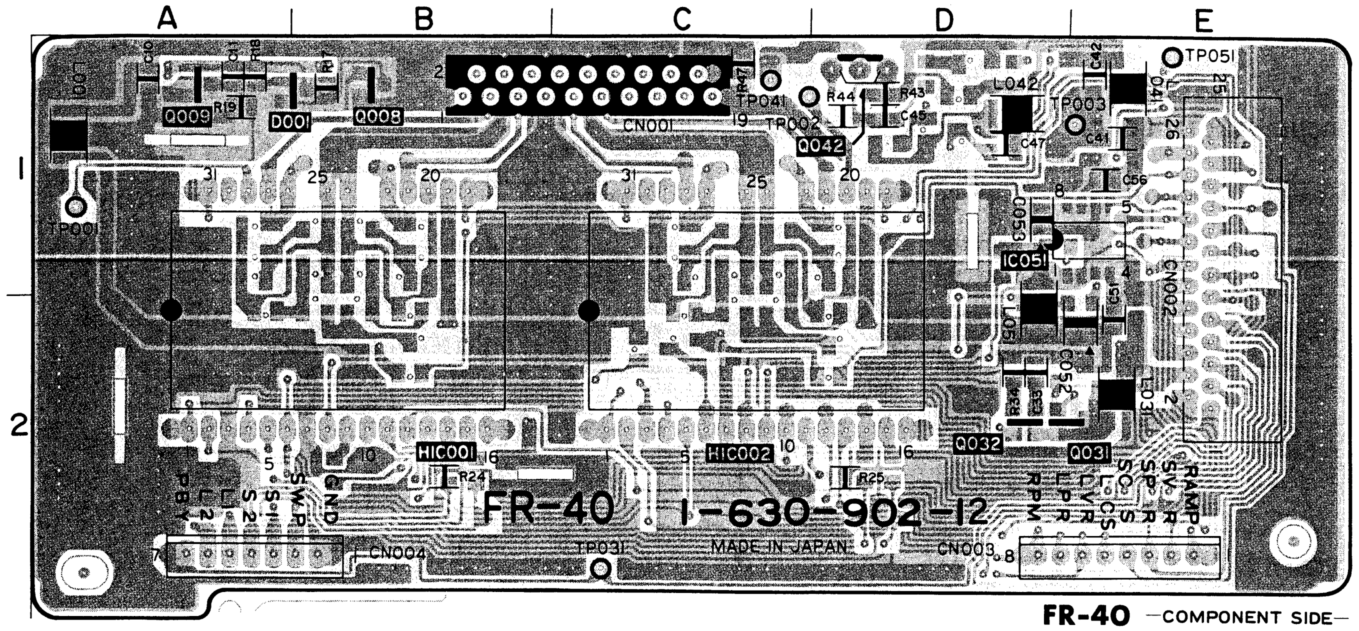
FR-40; HEAD AMPLIFIER/FLYING ERASE
RP-73 (SP), (LP); REC/PB HEAD AMPLIFIER

FR-40(1-630-902-11, 12)C

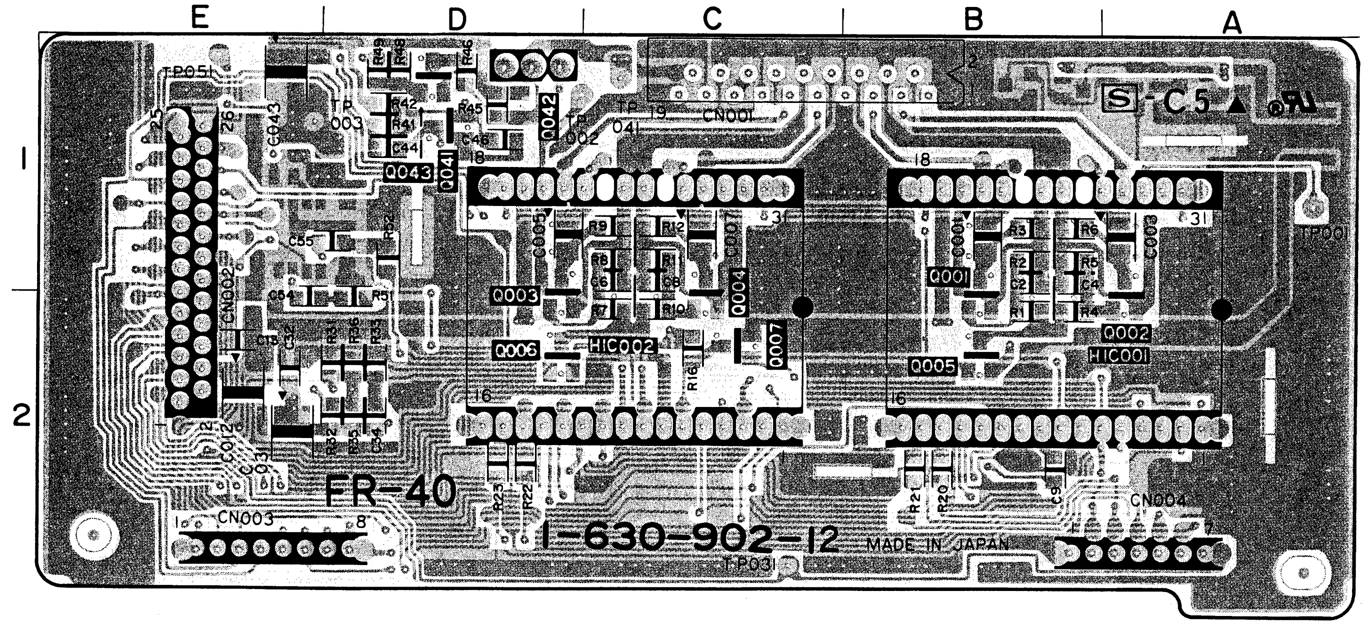
CN001	C-1
CN002	E-1
CN003	E-2
CN004	A-2
D001	A-1
HIC001	B-2
HIC002	C-2
IC051	E-1
Q008	B-1
Q009	A-1
Q031	E-2
Q032	D-2
Q042	D-1
TP001	A-1
TP002	C-1
TP003	E-1
TP031	C-2
TP041	C-1
TP051	E-1

FR-40(1-630-902-11, 12)S

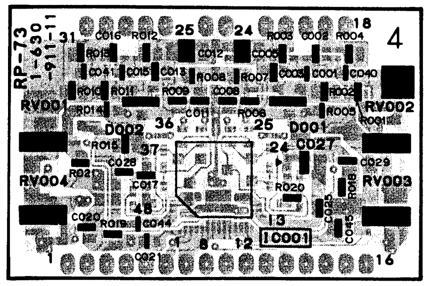
Q001	B-2
Q002	A-2
Q003	D-2
Q004	C-2
Q005	B-2
Q006	D-2
Q007	C-2
Q041	D-1
Q043	D-1


A
B
C
D
E
1
2
CN001
CN002
CN003
CN004
HIC001
HIC002
IC051
Q008
Q009
Q031
Q032
Q042
D001
TP001
TP002
TP003
TP031
TP041
TP051
FR-40 1-630-902-12
MADE IN JAPAN

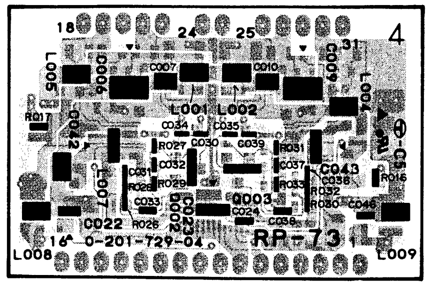
FR-40 —COMPONENT SIDE—
1-630-902-11, 12(1)
EVO-9800


E
D
C
B
A
1
2
TP051
TP001
TP031
CN001
CN002
CN003
CN004
Q001
Q002
Q003
Q004
Q005
Q006
Q007
Q041
Q043
HIC001
HIC002
FR-40 1-630-902-12
MADE IN JAPAN

FR-40 —SOLDERING SIDE—
1-630-902-11, 12(1)
EVO-9800


RP-73
1-630-911-11
RV001
RV002
RV003
RV004
D001
D002
IC001

RP-73(SP),(LP)
—COMPONENT SIDE—
1-630-911-11(1)
EVO-9800

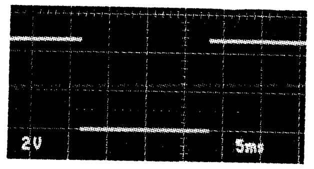

L001
L002
L005
L007
L008
L009
Q003
0-201-729-04
RP-73

RP-73(SP),(LP)
—SOLDERING SIDE—
1-630-911-11(1)
EVO-9800

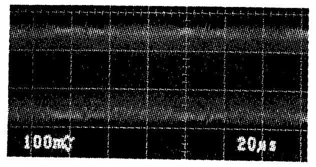
FR-40; HEAD AMPLIFIER/FLYING ERASE
RP-73 (SP), (LP); REC/PB HEAD AMPLIFIER

FR-40

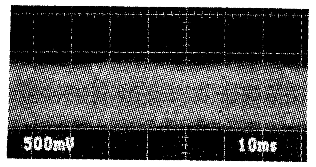
① CN002-15
PB

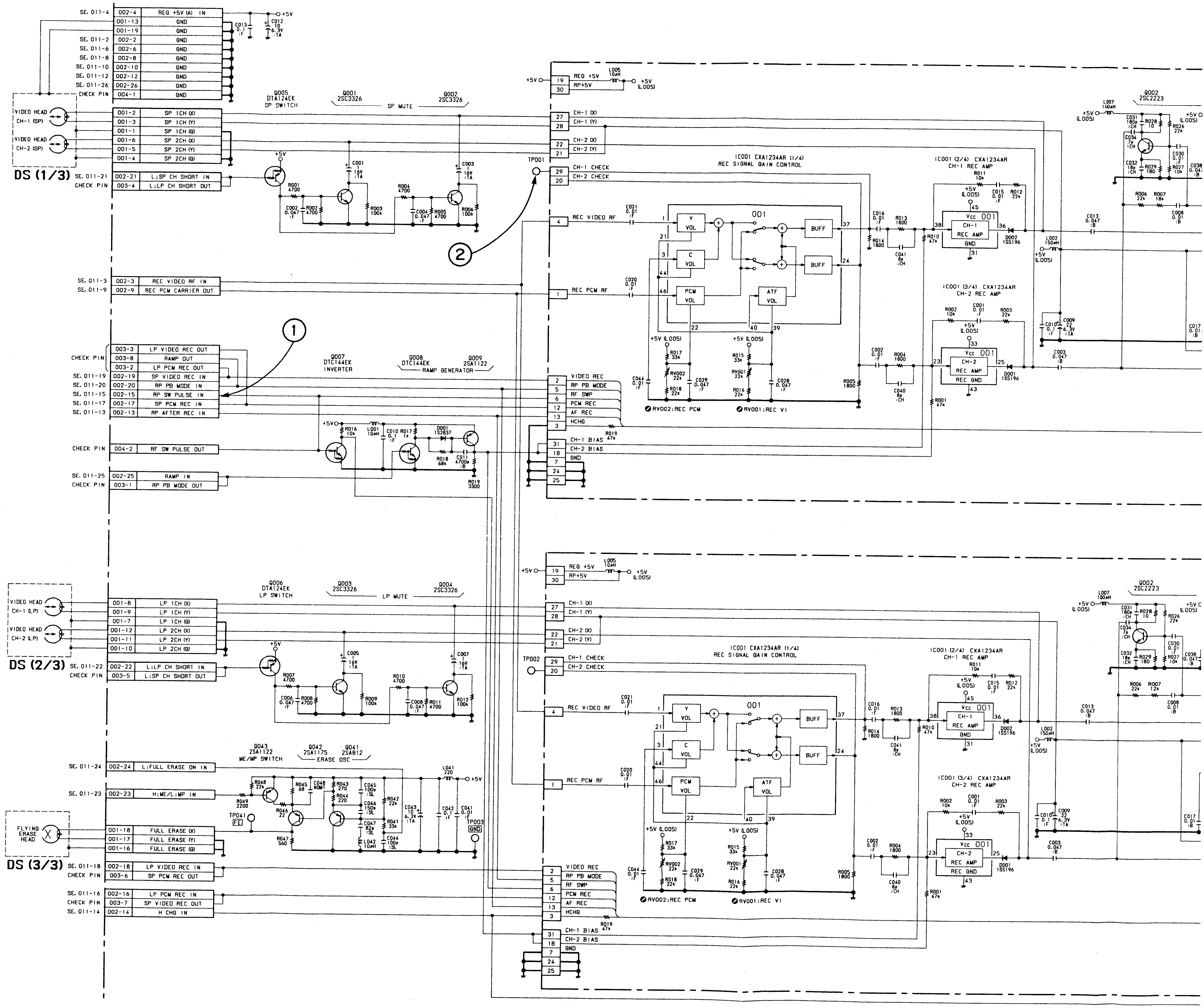


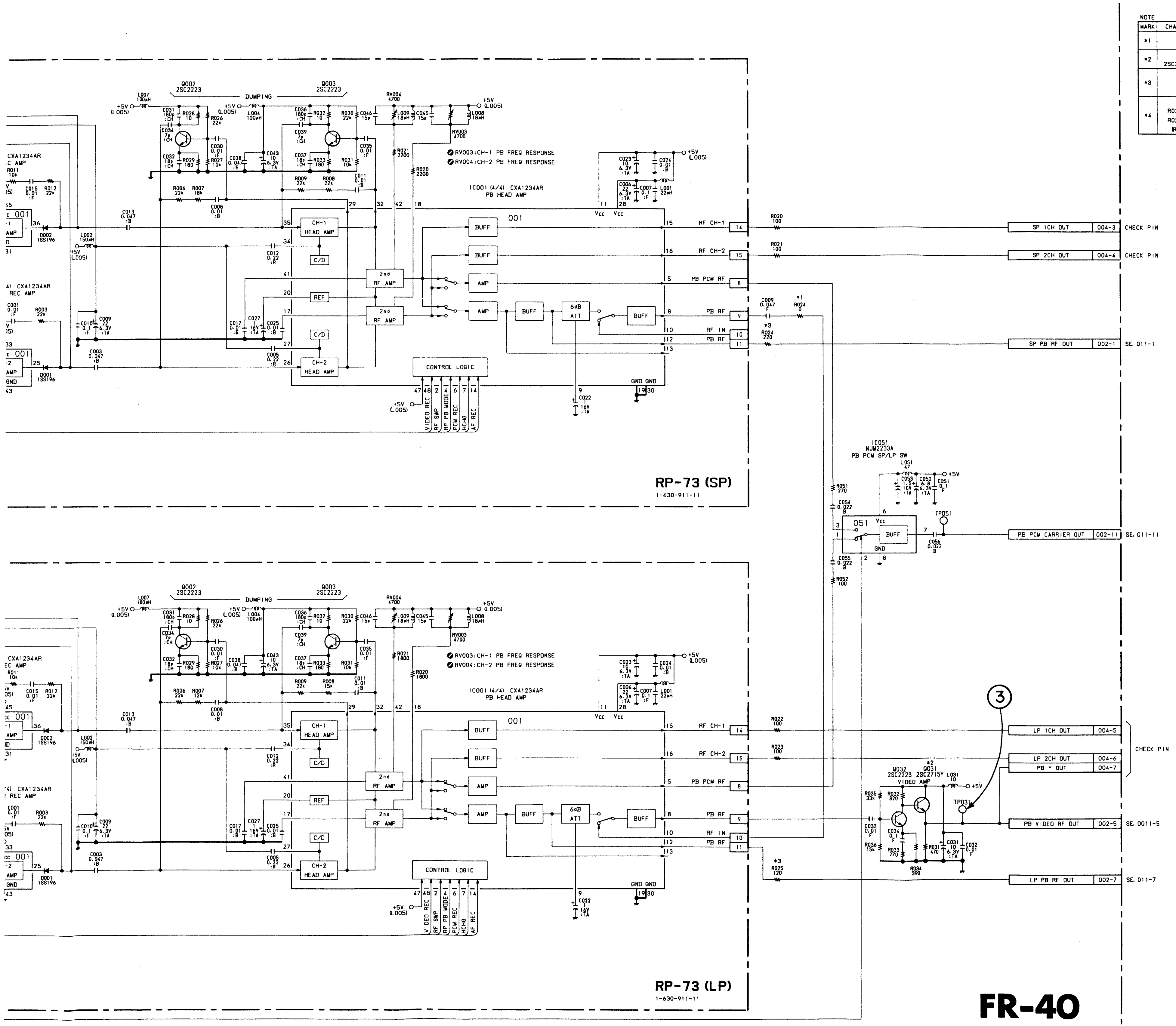
② TP001
REC



③ TP031
PB




DS (1/3)
DS (2/3)
DS (3/3)
VIDEO HEAD CH-1 (SP)
VIDEO HEAD CH-2 (SP)
VIDEO HEAD CH-1 (LP)
VIDEO HEAD CH-2 (LP)
FLYING ERASE HEAD
Q005 DTA124EK SP SWITCH
Q001 2SC3326
Q002 2SC3326
SP MUTE
Q006 DTA124EK LP SWITCH
Q003 2SC3326
Q004 2SC3326
LP MUTE
Q007 DTC144EK INVERTER
Q008 DTC144EK
Q009 2SA1122
RAMP GENERATOR
Q043 2SA1122 ME/MP SWITCH
Q042 2SA1175
Q041 2SA812
ERASE OSC
TP001
TP002
TP041 FE
TP003 GND
REG +5V (A) IN
GND
SP 1CH (X)
SP 1CH (Y)
SP 1CH (G)
SP 2CH (X)
SP 2CH (Y)
SP 2CH (G)
L:SP CH SHORT IN
L:LP CH SHORT OUT
REC VIDEO RF IN
REC PCM CARRIER OUT
LP VIDEO REC OUT
RAMP OUT
LP PCM REC OUT
SP VIDEO REC IN
RP PB MODE IN
RP SW PULSE IN
SP PCM REC IN
RP AFTER REC IN
RF SW PULSE OUT
RAMP IN
RP PB MODE OUT
LP 1CH (X)
LP 1CH (Y)
LP 1CH (G)
LP 2CH (X)
LP 2CH (Y)
LP 2CH (G)
L:LP CH SHORT IN
L:SP CH SHORT OUT
L:FULL ERASE ON IN
H:ME/L:MP IN
FULL ERASE (X)
FULL ERASE (Y)
FULL ERASE (G)
LP VIDEO REC IN
SP PCM REC OUT
LP PCM REC IN
SP VIDEO REC OUT
H CHG IN
CHECK PIN
REG +5V
RP+5V
CH-1 (X)
CH-1 (Y)
CH-2 (X)
CH-2 (Y)
CH-1 CHECK
CH-2 CHECK
REC VIDEO RF
REC PCM RF
VIDEO REC
RP PB MODE
RF SWP
PCM REC
AF REC
HCHG
CH-1 BIAS
CH-2 BIAS
GND
IC001 CXA1234AR (1/4) REC SIGNAL GAIN CONTROL
IC001 (2/4) CXA1234AR CH-1 REC AMP
IC001 (3/4) CXA1234AR CH-2 REC AMP
Y VOL
C VOL
PCM VOL
ATF VOL
BUFF
Vcc 001
CH-1 REC AMP
CH-2 REC AMP
REC GND
RV002:REC PCM
RV001:REC VI
Q002 2SC2223
D001 1SS196
D002 1SS196
L002 150µH
L005 10µH
L007 150µH
+5V (L005)


RP-73 (SP)
1-630-911-11
RP-73 (LP)
1-630-911-11
IC001 (4/4) CXA1234AR
PB HEAD AMP
Q002
2SC2223
Q003
2SC2223
DUMPING
RV003:CH-1 PB FREQ RESPONSE
RV004:CH-2 PB FREQ RESPONSE
CH-1 HEAD AMP
CH-2 HEAD AMP
C/D
REF
2nd RF AMP
BUFF
AMP
6dB ATT
CONTROL LOGIC
VIDEO REC
RF SWP
PB WIDE
PCM REC
ECHO
AF REC
RF CH-1
RF CH-2
PB PCM RF
PB RF
RF IN
GND
IC051
NJM2233A
PB PCM SP/LP SW
TP051
Q032
2SC2223
Q031
2SC2715Y
VIDEO AMP
TP031
SP 1CH OUT
SP 2CH OUT
SP PB RF OUT
PB PCM CARRIER OUT
LP 1CH OUT
LP 2CH OUT
PB Y OUT
PB VIDEO RF OUT
LP PB RF OUT
004-3
004-4
002-1
002-11
004-5
004-6
004-7
002-5
002-7
CHECK PIN
SE. 011-1
SE. 011-11
SE. 0011-5
SE. 011-7
③

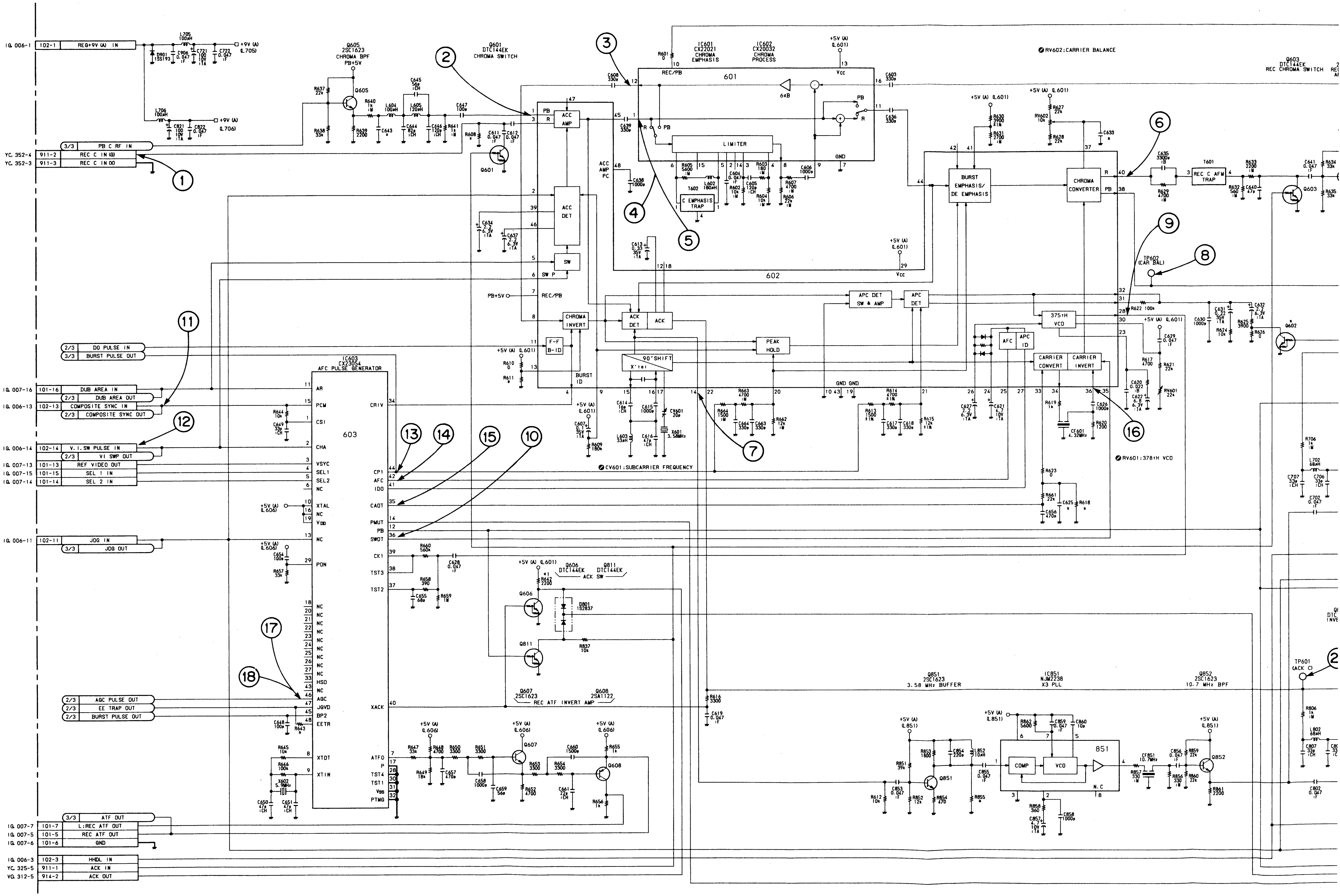
NOTE

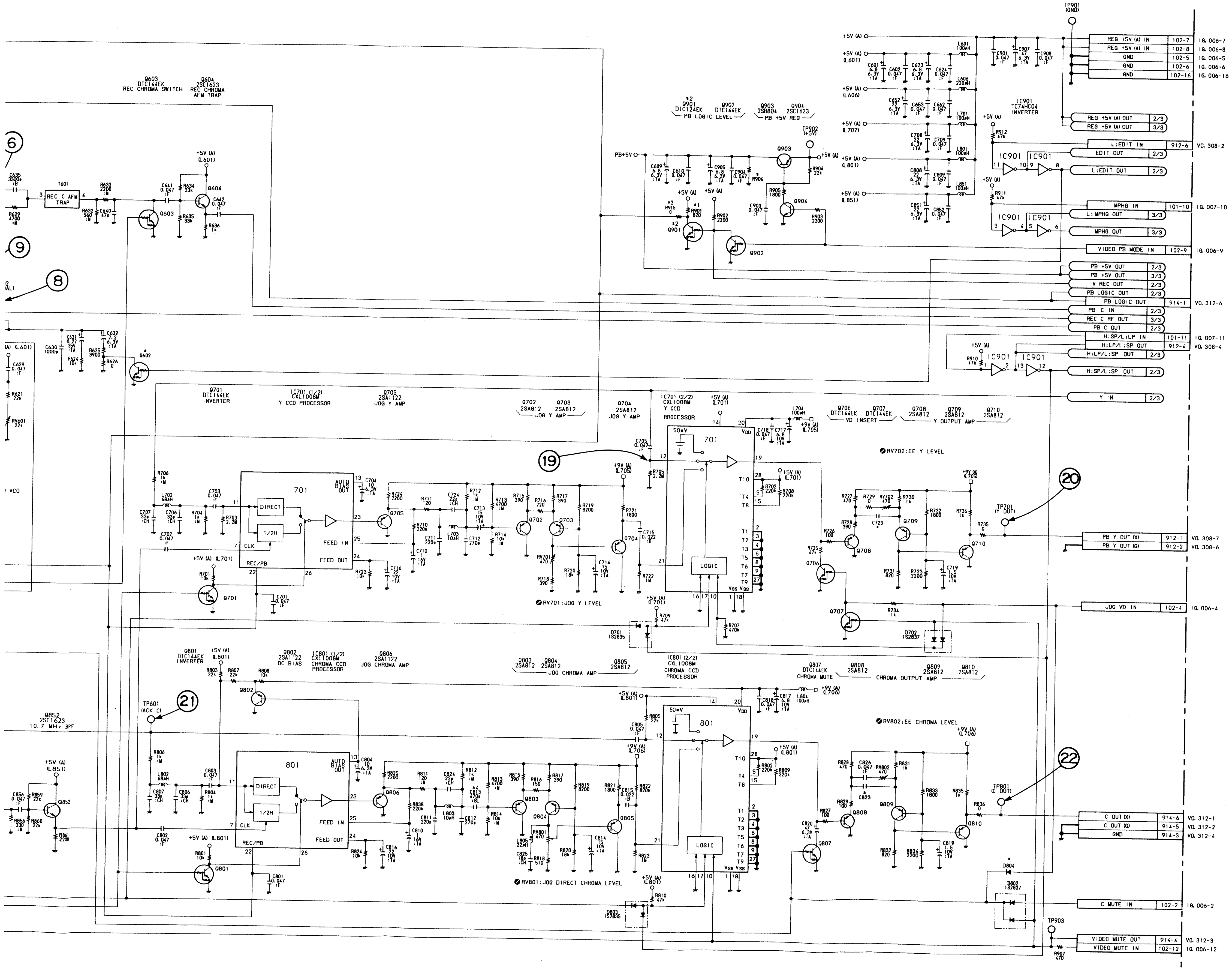
MARK	CHANGE INFORMATION	SERIAL NO.
*1	R024 DELETED	UC:10041- J:10011-
*2	Q031 CHANGED 2SC2223 → 2SC2715Y	
*3	R024 220 R025 120 ADDED	
*4	CHANGED R020 2200 → 1800 R021 2200 → 1800 (RP-73 (LP) BOARD)	

NOTE:NOMT IS NOT MOUNT

FR-40
1-630-902-11, 12(1)
EVO-9800

HK-4 (1/3); CHROMA PROCESS


IC601 CX22021 CHROMA EMPHASIS
IC602 CX20032 CHROMA PROCESS
IC603 CX23054 AFC PULSE GENERATOR
Q605 2SC1623 CHROMA BPF
Q601 DTC144EK CHROMA SWITCH
Q603 DTC144EK REC CHROMA SWITCH
Q606 DTC144EK ACK SW
Q611 DTC144EK
Q607 2SC1623
Q608 2SA1122
REC ATF INVERT AMP
Q851 2SC1623 3.58 MHz BUFFER
IC851 NJM2238 X3 PLL
Q852 2SC1623 10.7 MHz BPF
RV602:CARRIER BALANCE
CV601:SUBCARRIER FREQUENCY
RV601:378fH VCO
TP602 (CAR BAL)
TP601 (ACK C)
ACC AMP
ACC DET
SW
CHROMA INVERT
F-F B-ID
LIMITER
C EMPHASIS TRAP
ACK DET
ACK
90°SHIFT
PEAK HOLD
APC DET SW & AMP
APC DET
BURST EMPHASIS/ DE EMPHASIS
CHROMA CONVERTER
375fH VCO
AFC
APC ID
CARRIER CONVERT
CARRIER INVERT
REC C AFM TRAP
COMP
VCO
1G 006-1 102-1 REG+9V (A) IN
YC 352-4 911-2 REC C IN (2)
YC 352-3 911-3 REC C IN (1)
3/3 PB C RF IN
2/3 DO PULSE IN
3/3 BURST PULSE OUT
1G 007-16 101-16 DUB AREA IN
2/3 DUB AREA OUT
1G 006-13 102-13 COMPOSITE SYNC IN
2/3 COMPOSITE SYNC OUT
1G 006-14 102-14 V.I.SW PULSE IN
2/3 VI SWP OUT
1G 007-13 101-13 REF VIDEO OUT
1G 007-15 101-15 SEL 1 IN
1G 007-14 101-14 SEL 2 IN
1G 006-11 102-11 JOG IN
3/3 JOG OUT
2/3 AGC PULSE OUT
2/3 EE TRAP OUT
2/3 BURST PULSE OUT
3/3 ATF OUT
1G 007-7 101-7 L:REC ATF OUT
1G 007-5 101-5 REC ATF OUT
1G 007-6 101-6 GND
1G 006-3 102-3 HHDL IN
YC 325-5 911-1 ACK IN
VG 312-5 914-2 ACK OUT
+9V (A) (L705)
+9V (A) (L706)
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
⑪
⑫
⑬
⑭
⑮
⑯
⑰
⑱


TP901 (GND)
+5V (A) (L601)
REG +5V (A) IN 102-7 IG. 006-7
REG +5V (A) IN 102-8 IG. 006-8
GND 102-5 IG. 006-5
GND 102-6 IG. 006-6
GND 102-16 IG. 006-16
IC901 TC74HC04 INVERTER
REG +5V (A) OUT 2/3
REG +5V (A) OUT 3/3
L:EDIT IN 912-6 VO. 308-2
EDIT OUT 2/3
L:EDIT OUT 2/3
MPHG IN 101-10 IG. 007-10
L: MPHG OUT 3/3
MPHG OUT 3/3
VIDEO PB MODE IN 102-9 IG. 006-9
PB +5V OUT 2/3
PB +5V OUT 3/3
V REC OUT 2/3
PB LOGIC OUT 2/3
PB LOGIC OUT 914-1 VO. 312-6
PB C IN 2/3
REC C RF OUT 3/3
PB C OUT 2/3
H:SP/L:LP IN 101-11 IG. 007-11
H:LP/L:SP OUT 912-4 VO. 308-4
H:LP/L:SP OUT 2/3
H:SP/L:SP OUT 2/3
Y IN 2/3
Q603 DTC144EK REC CHROMA SWITCH
Q604 2SC1623 REC CHROMA AFM TRAP
T601 REC C AFM TRAP
*2 Q901 DTC124EK
Q902 DTC144EK
PB LOGIC LEVEL
Q903 2SB804
Q904 2SC1623
PB +5V REG
TP902 (+5V)
PB+5V
Q701 DTC144EK INVERTER
IC701 (1/2) CXL1008M Y CCD PROCESSOR
Q705 2SA1122 JOG Y AMP
Q702 2SA812
Q703 2SA812
JOG Y AMP
Q704 2SA812 JOG Y AMP
IC701 (2/2) CXL1008M Y CCD PROCESSOR
Q706 DTC144EK
Q707 DTC144EK
VD INSERT
Q708 2SA812
Q709 2SA812
Q710 2SA812
Y OUTPUT AMP
RV702: EE Y LEVEL
RV701: JOG Y LEVEL
701
DIRECT
1/2H
AUTO BIAS OUT
FEED IN
FEED OUT
REC/PB
CLK
LOGIC
50mV
TP701 (Y OUT)
PB Y OUT (X) 912-1 VO. 308-7
PB Y OUT (G) 912-2 VO. 308-6
JOG VD IN 102-4 IG. 006-4
D701 1SS283
D702 1SS283
Q801 DTC144EK INVERTER
Q802 2SA1122 DC BIAS
IC801 (1/2) CXL1008M CHROMA CCD PROCESSOR
Q806 2SA1122 JOG CHROMA AMP
Q803 2SA812
Q804 2SA812
JOG CHROMA AMP
Q805 2SA812
IC801 (2/2) CXL1008M CHROMA CCD PROCESSOR
Q807 DTC144EK CHROMA MUTE
Q808 2SA812
Q809 2SA812
Q810 2SA812
CHROMA OUTPUT AMP
TP601 (ACK C)
Q852 2SC1623 10.7 MHz BPF
801
RV802: EE CHROMA LEVEL
RV801: JOG DIRECT CHROMA LEVEL
TP801 (C OUT)
C OUT (X) 914-6 VO. 312-1
C OUT (G) 914-5 VO. 312-2
GND 914-3 VO. 312-4
C MUTE IN 102-2 IG. 006-2
D803 1SS283
D802 1SS283
TP903
VIDEO MUTE OUT 914-4 VO. 312-3
VIDEO MUTE IN 102-12 IG. 006-12
⑥
⑧
⑨
⑲
⑳
㉑
㉒

NOTE;

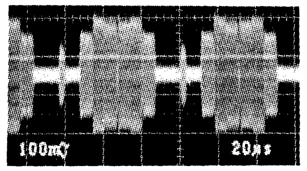
MARK	CHANGE INFORMATION	SERIAL NO
*1	CHANGED R642 10K → 2200 R901 2200 → 820	J:10011- UC:10041-
*2	Q901 CHANGED DTC144EK→DTC124EK	
*3	R915 ADDED	
*4	C813 ADDED 0.0047:F →470P:SL	J:10381- UC:11071-

HK-4(1/3)

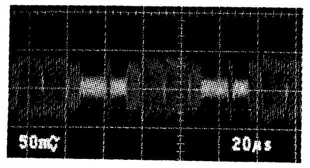
1-630-903-11, 12(2)
EVO-9800

HK-4 (1/3)

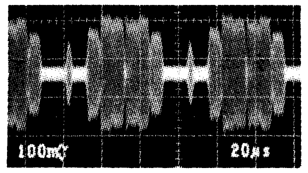
① CN911-2
REC



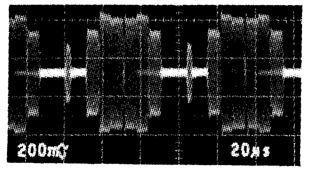
② IC602-1
PB



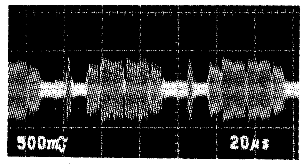
③ IC601-12
PB



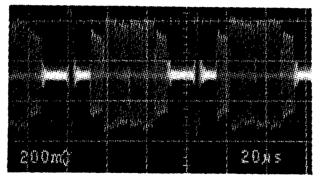
④ IC601-1
REC



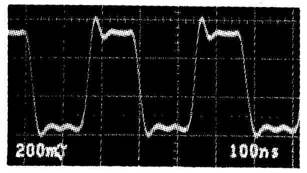
⑤ IC601-1
PB



⑥ IC602-40
REC

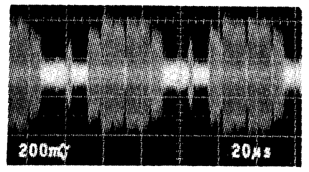


⑦ IC602-14
EE

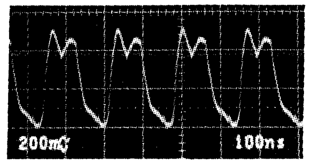


3.58MHz

⑧ TP602
PB

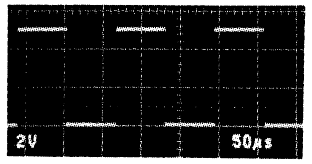


⑨ IC602-28
EE

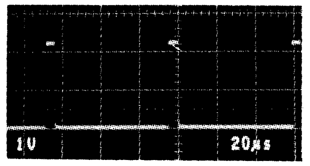


5.95MHz

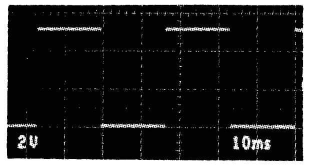
⑩ IC603-36
EE



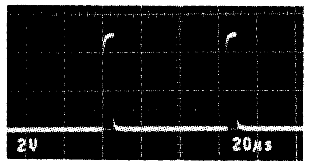
⑪ CN102-13
EE



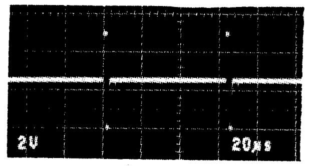
⑫ CN102-14
EE



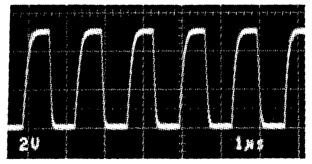
⑬ IC603-44
EE



⑭ IC603-42
REC

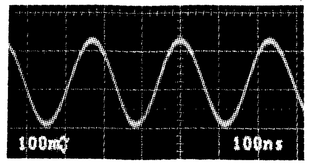


⑮ IC603-35
EE



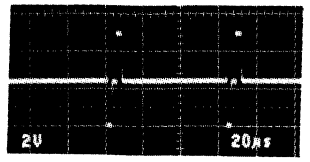
753kHz

⑯ IC602-36
EE

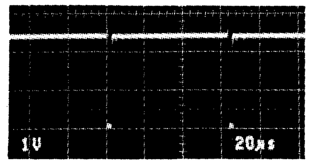


4.32MHz

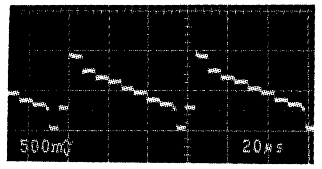
⑰ IC603-46
REC



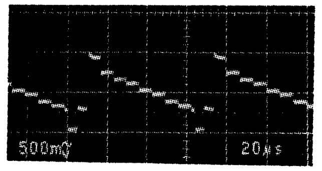
⑱ IC603-46
PB



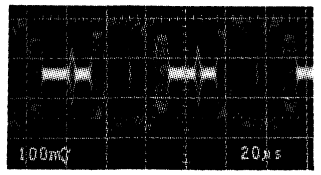
⑲ IC701-12
PB



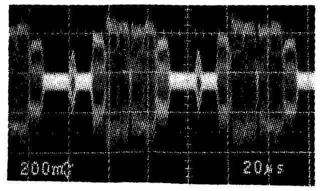
⑳ TP701
PB



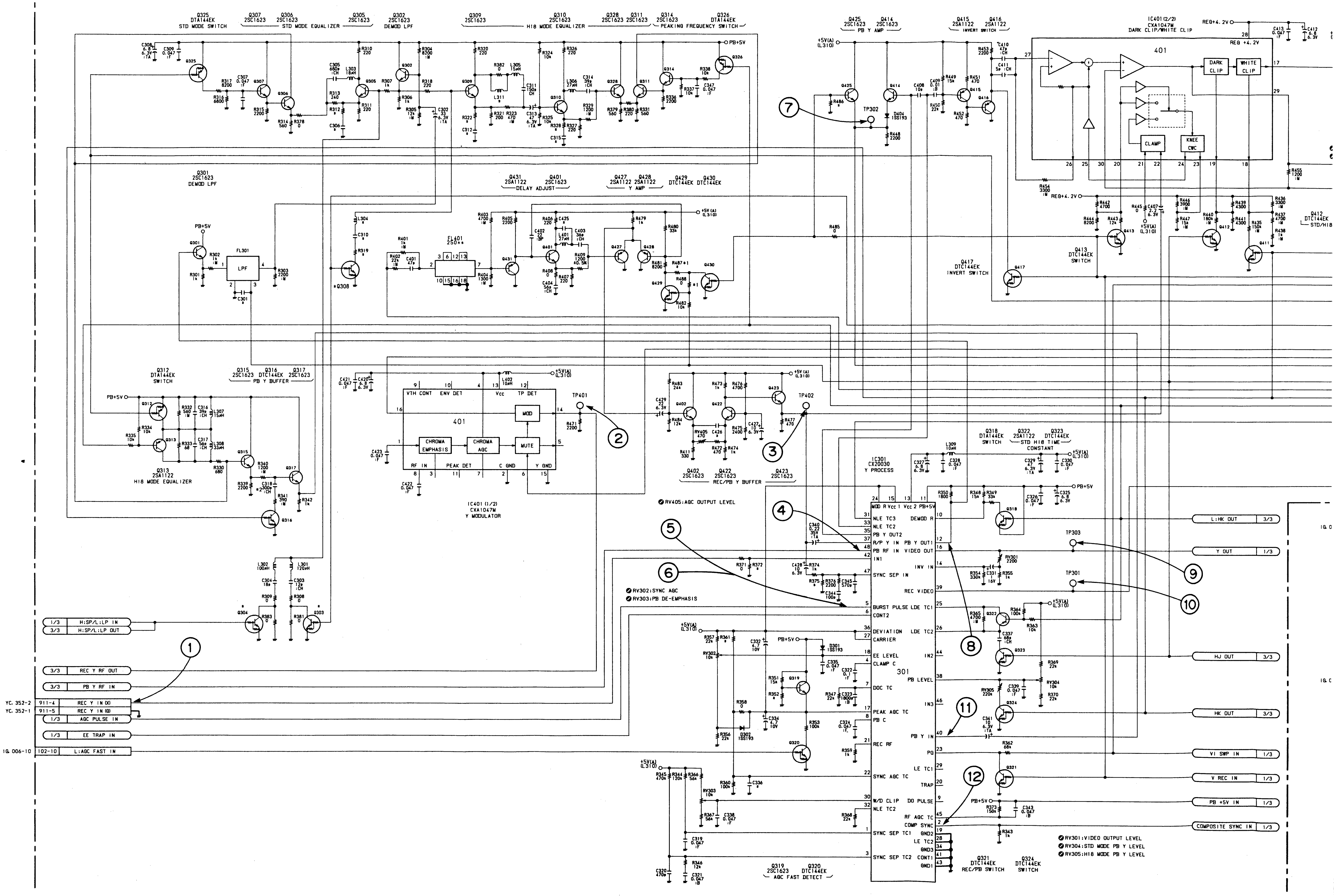
㉑ TP601
PB



㉒ TP801
PB



HK-4 (2/3); Y PROCESS


Q325 DTA144EK STD MODE SWITCH
Q307 2SC1623 Q306 2SC1623 STD MODE EQUALIZER
Q305 2SC1623
Q302 2SC1623 DEMOD LPF
Q309 2SC1623
Q310 2SC1623 H18 MODE EQUALIZER
Q328 2SC1623 Q311 2SC1623
Q314 2SC1623 PEAKING FREQUENCY SWITCH
Q326 DTA144EK
PB+5V
Q301 2SC1623 DEMOD LPF
FL301 LPF
Q431 2SA1122 Q401 2SC1623 DELAY ADJUST
Q427 2SA1122 Q428 2SA1122 Y AMP
Q429 DTC144EK Q430 DTC144EK
FL401 250ns
+5V(A) (L310)
Q312 DTA144EK SWITCH
Q315 2SC1623 Q316 DTC144EK Q317 2SC1623 PB Y BUFFER
Q313 2SA1122 H18 MODE EQUALIZER
IC401 (1/2) CXA1047M Y MODULATOR
VTH CONT ENV DET Vcc TP DET
MOD
401
CHROMA EMPHASIS
CHROMA AGC
MUTE
RF IN PEAK DET C GND Y GND
TP401
TP402
Q402 2SC1623 Q422 2SC1623 REC/PB Y BUFFER Q423 2SC1623
RV405:AGC OUTPUT LEVEL
RV302:SYNC AGC
RV303:PB DE-EMPHASIS
1/3 H:SP/L:LP IN
3/3 H:SP/L:LP OUT
3/3 REC Y RF OUT
3/3 PB Y RF IN
YC 352-2 911-4 REC Y IN (X)
YC 352-1 911-5 REC Y IN (B)
1/3 AGC PULSE IN
1/3 EE TRAP IN
IG 006-10 102-10 L:AGC FAST IN
Q425 2SC1623 Q414 2SC1623 PB Y AMP
Q415 2SA1122 Q416 2SA1122 INVERT SWITCH
TP302
Q417 DTC144EK INVERT SWITCH
IC401 (2/2) CXA1047M DARK CLIP/WHITE CLIP
REG+4.2V
401
DARK CLIP
WHITE CLIP
CLAMP
KNEE CWC
Q413 DTC144EK SWITCH
Q412 DTC144EK STD/H18
IC301 CX20030 Y PROCESS
301
MOD R Vcc 1 Vcc 2 PB+5V
NLE TC3
NLE TC2
PB Y OUT2
R/P Y IN
PB RF IN
IN1
SYNC SEP IN
BURST PULSE
CONT2
DEVIATION CARRIER
EE LEVEL
CLAMP C
DOC TC
PEAK AGC TC
PB C
REC RF
SYNC AGC TC
W/D CLIP
NLE TC2
SYNC SEP TC1
SYNC SEP TC2
DEMOD R
PB Y OUT1
VIDEO OUT
INV IN
REC VIDEO
LDE TC1
LDE TC2
IN2
PB LEVEL
IN3
PB Y IN
PG
LE TC1
TRAP
DO PULSE
RF AGC TC
COMP SYNC
GND2
LE TC2
GND3
CONT1
GND1
Q318 DTA144EK SWITCH
Q322 2SA1122 Q323 DTC144EK STD H18 TIME CONSTANT
Q319 2SC1623 Q320 DTC144EK AGC FAST DETECT
Q321 DTC144EK REC/PB SWITCH
Q324 DTC144EK SWITCH
TP303
TP301
L:HK OUT 3/3
Y OUT 1/3
HJ OUT 3/3
HK OUT 3/3
VI SWP IN 1/3
V REC IN 1/3
PB +5V IN 1/3
COMPOSITE SYNC IN 1/3
RV301:VIDEO OUTPUT LEVEL
RV304:STD MODE PB Y LEVEL
RV305:H18 MODE PB Y LEVEL
①
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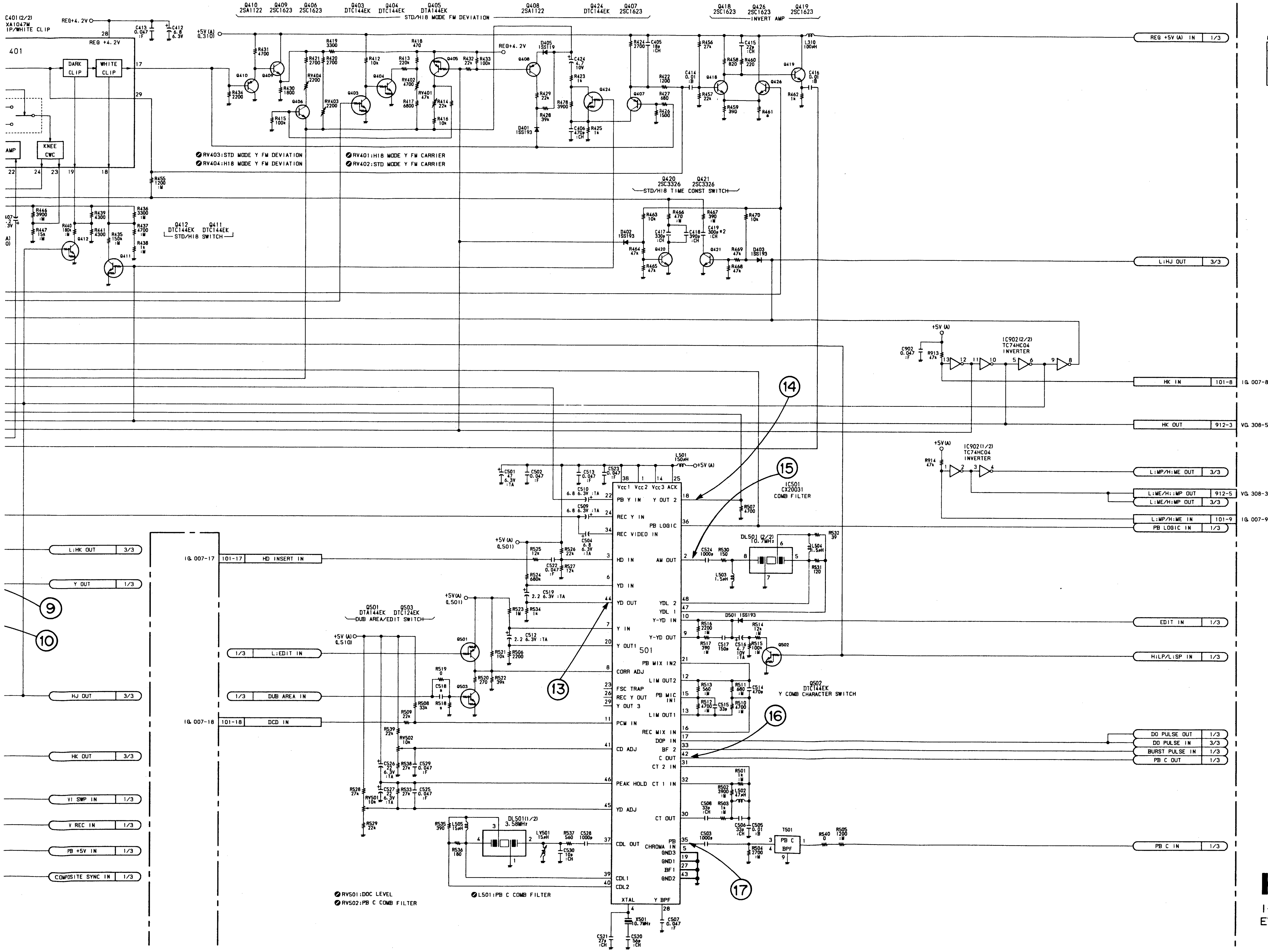
⑪
⑫

A | B | C | D | E | F | G | H | I


C401(2/2) XA1047M IP/WHITE CLIP
401
DARK CLIP
WHITE CLIP
KNEE CWC
AMP
Q410 2SA1122
Q409 2SC1623
Q406 2SC1623
Q403 DTC144EK
Q404 DTC144EK
Q405 DTA144EK
STD/HI8 MODE FM DEVIATION
Q408 2SA1122
Q424 DTC144EK
Q407 2SC1623
Q418 2SC1623
Q426 2SC1623
Q419 2SC1623
INVERT AMP
REG+4.2V
+5V (A) (L310)
RV403:STD MODE Y FM DEVIATION
RV404:HI8 MODE Y FM DEVIATION
RV401:HI8 MODE Y FM CARRIER
RV402:STD MODE Y FM CARRIER
Q420 2SC3326
Q421 2SC3326
STD/HI8 TIME CONST SWITCH
Q412 DTC144EK
Q411 DTC144EK
STD/HI8 SWITCH
REG +5V (A) IN 1/3
L:HJ OUT 3/3
IC902(2/2) TC74HC04 INVERTER
IC902(1/2) TC74HC04 INVERTER
HK IN 101-8 IG 007-8
HK OUT 912-3 VG 308-5
L:MP/H:ME OUT 3/3
L:ME/H:MP OUT 912-5 VG 308-3
L:ME/H:MP OUT 3/3
L:MP/H:ME IN 101-9 IG 007-9
PB LOGIC IN 1/3
IC501 CX20031 COMB FILTER
DL501(2/2) 10.7MHz
EDIT IN 1/3
H:LP/L:SP IN 1/3
Q502 DTC144EK Y COMB CHARACTER SWITCH
DO PULSE OUT 1/3
DO PULSE IN 3/3
BURST PULSE IN 1/3
PB C OUT 1/3
PB C IN 1/3
L:HK OUT 3/3
Y OUT 1/3
HJ OUT 3/3
HK OUT 3/3
VI SWP IN 1/3
V REC IN 1/3
PB +5V IN 1/3
COMPOSITE SYNC IN 1/3
IG 007-17 101-17 HD INSERT IN
IG 007-18 101-18 DCD IN
1/3 L:EDIT IN
1/3 DUB AREA IN
Q501 DTA144EK
Q503 DTC124EK
DUB AREA/EDIT SWITCH
DL501(1/2) 3.58MHz
T501 PB C BPF
RV501:DOC LEVEL
RV502:PB C COMB FILTER
L501:PB C COMB FILTER
X501 10.7MHz
⑨
⑩
⑬
⑭
⑮
⑯
⑰

NOTE:

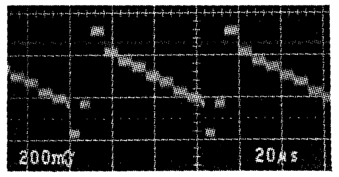
MARK	CHANGE INFORMATION	SERIAL NO
*1	R487 ADDED R488 ADDED	J:10061- UC:10341-
*2	C318, 419 CHANGED 300P → 300P:CH	J:10381- UC:11071-

HK-4(2/3)

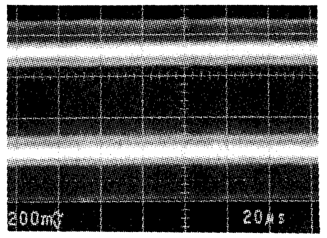
1-630-903-11, 12(2)
EVO-9800

HK-4 (2/3)

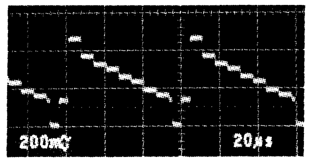
① CN911-4
REC



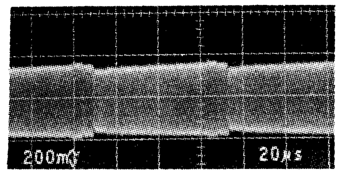
② TP401
REC



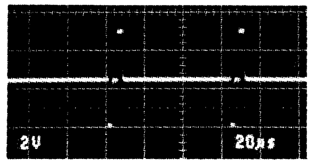
③ TP402
EE



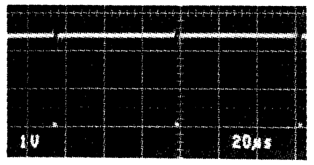
④ IC301-48
PB



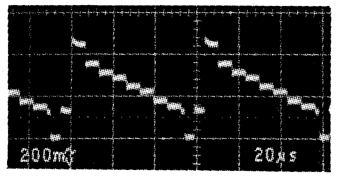
⑤ IC301-5
REC



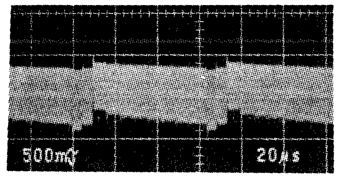
⑥ IC301-5
PB



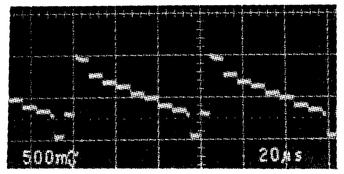
⑦ TP302
PB



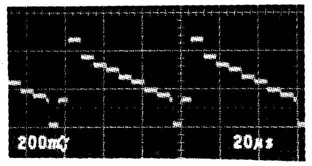
⑧ IC301-12
PB



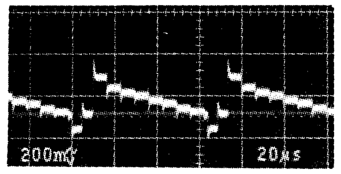
⑨ TP303
PB



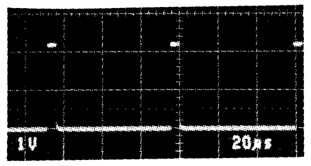
⑩ TP301
REC



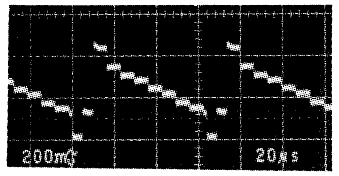
⑪ IC301-40
PB



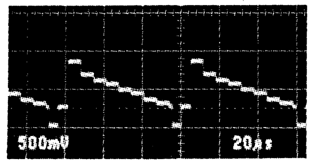
⑫ IC301-2
EE



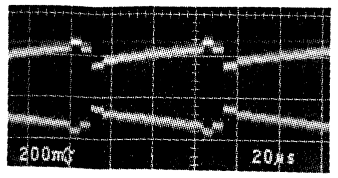
⑬ IC501-44
PB



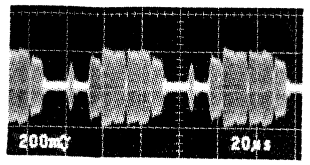
⑭ IC501-18
EE



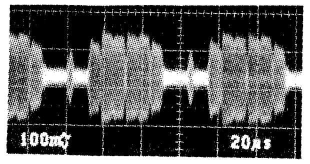
⑮ IC501-2
PB



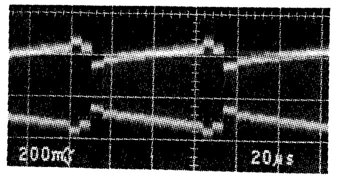
⑯ IC501-42
PB



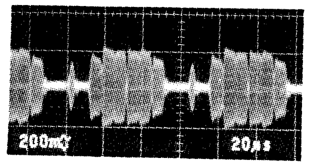
⑰ IC501-35
PB



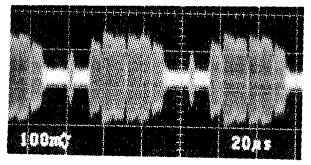
⑮ IC501-2
PB



⑥ IC501-42
PB



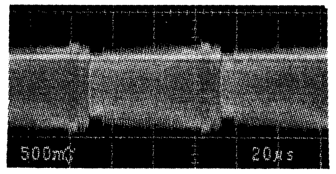
⑦ IC501-35
PB



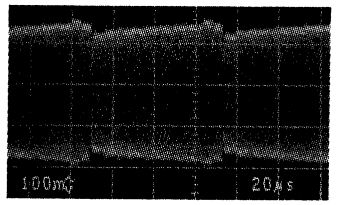
HK-4 (3/3); Y/C/AFM MIX

HK-4 (3/3)

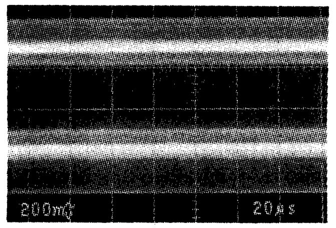
① CN102-17
PB



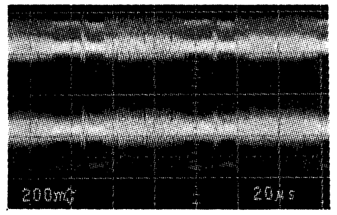
② TP102
PB

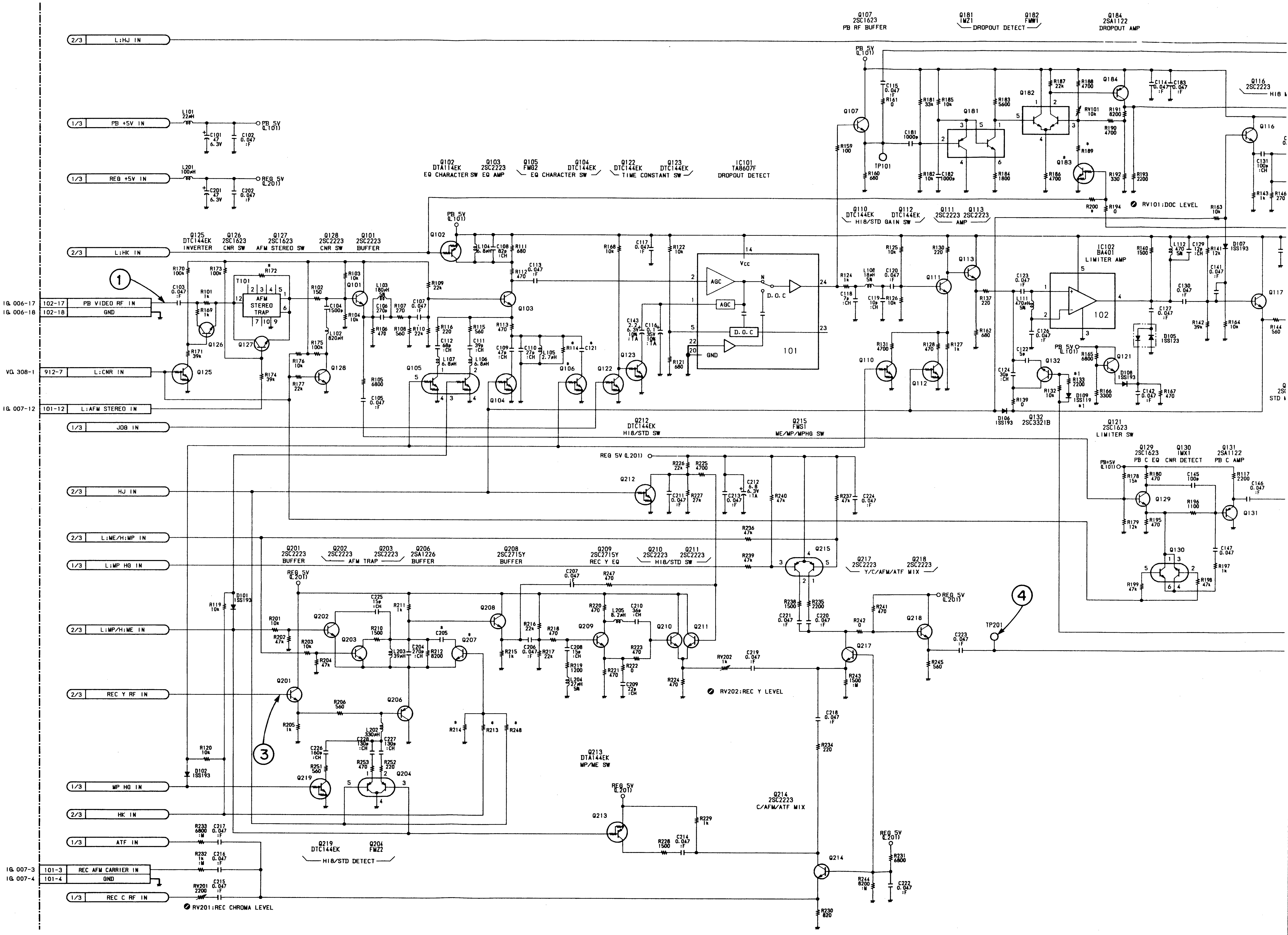


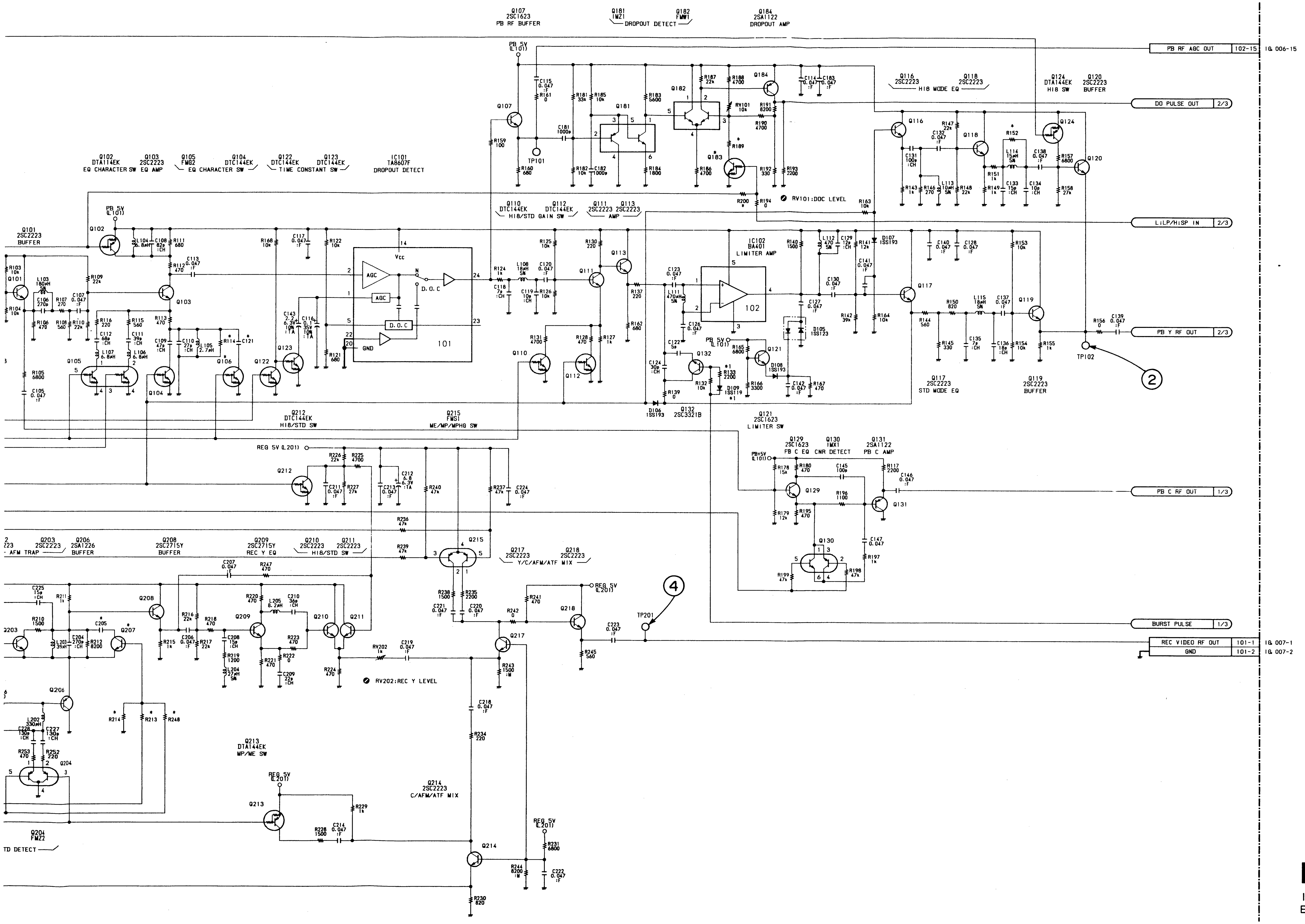
③ Q201-B
REC



④ TP201
REC




2/3 L:HJ IN
1/3 PB +5V IN
1/3 REG +5V IN
2/3 L:HK IN
IG 006-17 102-17 PB VIDEO RF IN
IG 006-18 102-18 GND
VG 308-1 912-7 L:CNR IN
IG 007-12 101-12 L:AFM STEREO IN
1/3 JOG IN
2/3 HJ IN
2/3 L:ME/H:MP IN
1/3 L:MP HG IN
2/3 L:MP/H:ME IN
2/3 REC Y RF IN
1/3 MP HG IN
2/3 HK IN
1/3 ATF IN
IG 007-3 101-3 REC AFM CARRIER IN
IG 007-4 101-4 GND
1/3 REC C RF IN
PB 5V (L101)
REG 5V (L201)
Q125 DTC144EK INVERTER
Q126 2SC1623 CNR SW
Q127 2SC1623 AFM STEREO SW
Q128 2SC2223 CNR SW
Q101 2SC2223 BUFFER
T101 AFM STEREO TRAP
Q102 DTA114EK EQ CHARACTER SW
Q103 2SC2223 EQ AMP
Q105 FMG2 EQ CHARACTER SW
Q104 DTC144EK
Q122 DTC144EK
Q123 DTC144EK TIME CONSTANT SW
IC101 TA8607F DROPOUT DETECT
AGC
D.O.C
Vcc
GND
101
Q107 2SC1623 PB RF BUFFER
Q181 IMZ1
Q182 FMW1
DROPOUT DETECT
Q184 2SA1122 DROPOUT AMP
Q183
TP101
RV101:DOC LEVEL
Q110 DTC144EK
Q112 DTC144EK
HI8/STD GAIN SW
Q111 2SC2223
Q113 2SC2223
AMP
IC102 BA401 LIMITER AMP
102
Q121 2SC1623 LIMITER SW
Q132 2SC3321B
Q116 2SC2223
Q117
Q212 DTC144EK HI8/STD SW
Q215 FMS1 ME/MP/MPHG SW
Q129 2SC1623 PB C EQ
Q130 IMX1 CNR DETECT
Q131 2SA1122 PB C AMP
Q201 2SC2223 BUFFER
Q202 2SC2223
Q203 2SC2223
AFM TRAP
Q206 2SA1226 BUFFER
Q208 2SC2715Y BUFFER
Q209 2SC2715Y REC Y EQ
Q210 2SC2223
Q211 2SC2223
HI8/STD SW
Q217 2SC2223
Q218 2SC2223
Y/C/AFM/ATF MIX
Q207
Q219 DTC144EK
Q204 FMZ2
HI8/STD DETECT
Q213 DTA144EK MP/ME SW
Q214 2SC2223 C/AFM/ATF MIX
TP201
RV202:REC Y LEVEL
RV201:REC CHROMA LEVEL
STD
①
③
④


Q107 2SC1623 PB RF BUFFER
Q181 IMZ1
Q182 FMW1
DROPOUT DETECT
Q184 2SA1122 DROPOUT AMP
Q102 DTA114EK EQ CHARACTER SW
Q103 2SC2223 EQ AMP
Q105 FMG2
Q104 DTC144EK EQ CHARACTER SW
Q122 DTC144EK
Q123 DTC144EK TIME CONSTANT SW
IC101 TA8607F DROPOUT DETECT
Q101 2SC2223 BUFFER
Q110 DTC144EK
Q112 DTC144EK H18/STD GAIN SW
Q111 2SC2223
Q113 2SC2223 AMP
IC102 BA401 LIMITER AMP
Q116 2SC2223
Q118 2SC2223 H18 MODE EQ
Q124 DTA144EK H18 SW
Q120 2SC2223 BUFFER
Q117 2SC2223 STD MODE EQ
Q119 2SC2223 BUFFER
Q212 DTC144EK H18/STD SW
Q215 FMS1 ME/MP/MPHG SW
Q132 2SC3321B
Q121 2SC1623 LIMITER SW
Q129 2SC1623 FB C EQ
Q130 IMX1 CNR DETECT
Q131 2SA1122 PB C AMP
Q203 2SC2223 AFM TRAP
Q206 2SA1226 BUFFER
Q208 2SC2715Y BUFFER
Q209 2SC2715Y REC Y EQ
Q210 2SC2223
Q211 2SC2223 H18/STD SW
Q217 2SC2223
Q218 2SC2223 Y/C/AFM/ATF MIX
Q213 DTA144EK MP/ME SW
Q214 2SC2223 C/AFM/ATF MIX
Q204 FMZ2 TD DETECT
PB 5V (L101)
REG 5V (L201)
AGC
D.O.C
Vcc
GND
101
102
TP101
TP102
TP201
RV101:DOC LEVEL
RV202:REC Y LEVEL
PB RF AGC OUT 102-15 IG 006-15
DO PULSE OUT 2/3
L:LP/H:SP IN 2/3
PB Y RF OUT 2/3
PB C RF OUT 1/3
BURST PULSE 1/3
REC VIDEO RF OUT 101-1 IG 007-1
GND 101-2 IG 007-2
②
④

NOTE:

MARK	CHANGE INFORMATION	SERIAL NO
*1	D109, R133 ADDED	J:10061- UC:10341-

HK-4(3/3)

1-630-903-11, 12(2)
EVO-9800

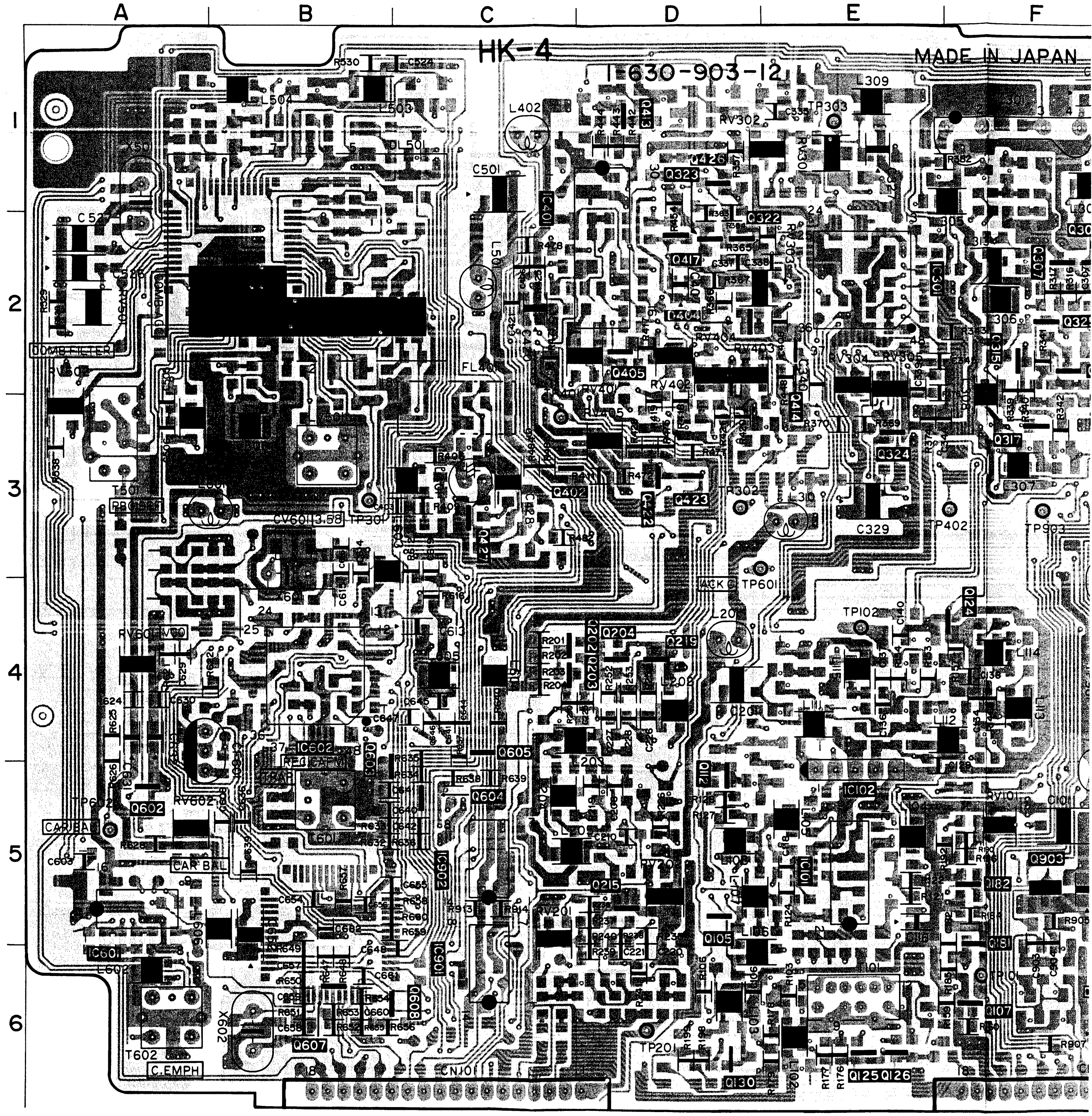
HK-4 ; Y/C VIDEO PROCESS

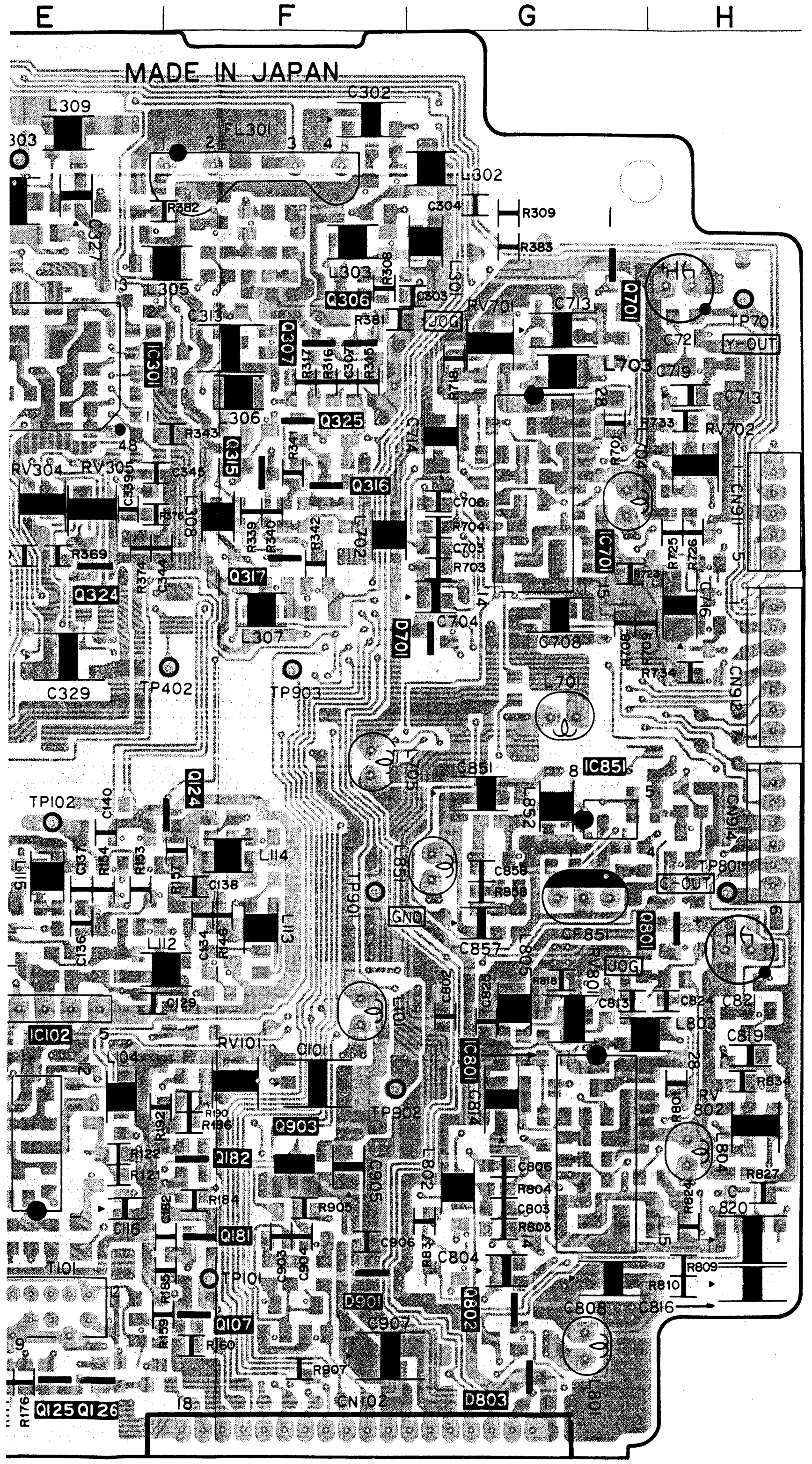
HK-4(1-630-903-11, 12)C

CF601	A-4
CF851	G-4
CN101	C-6
CN102	F-6
CN911	H-2
CN912	H-3
CN914	H-4
CV601	B-3
D404	D-2
D701	G-3
D803	G-6
D901	F-6
DL501	B-2
FL301	F-1
FL401	C-3
IC101	E-5
IC102	E-5
IC301	E-2
IC401	D-2
IC601	A-5
IC602	B-4
IC701	G-2
IC801	G-5
IC851	G-4
IC901	C-6
IC902	C-5
LV501	B-3
Q105	D-5
Q107	F-6
Q112	D-5
Q124	E-4
Q125	E-6
Q126	E-6
Q130	D-6
Q181	F-6
Q182	F-5
Q202	C-4
Q203	C-4
Q204	D-4
Q215	D-5
Q219	D-4
Q306	F-2
Q307	F-2
Q315	F-2
Q316	F-2
Q317	F-3
Q322	D-2
Q323	D-2
Q324	E-3
Q325	F-2
Q402	C-3
Q405	D-2
Q413	D-1
Q414	E-2
Q417	D-2
Q422	D-3
Q423	D-3
Q426	D-1
Q427	C-3
Q602	A-5
Q603	B-5
Q604	C-5
Q605	C-4
Q607	B-6
Q608	B-6
Q701	G-2
Q801	H-4
Q802	G-6
Q903	F-5
RV101	F-5
RV201	C-5
RV202	D-5
RV301	E-1
RV302	D-1
RV303	E-2
RV304	E-2
RV305	E-2
RV401	D-2
RV402	D-2
RV403	D-2
RV404	D-2
RV405	D-3
RV501	A-2
RV502	A-3
RV601	A-4
RV602	A-5
RV701	G-2
RV702	H-2
RV801	G-5
RV802	H-5
T101	E-6
T501	A-3
T601	B-5
T602	A-6
TP101	F-6
TP102	E-4
TP201	D-6
TP301	B-3
TP302	D-3
TP303	E-1
TP401	C-3
TP402	E-3
TP601	D-4
TP602	A-5
TP701	H-2
TP801	H-4
TP901	F-4
TP902	F-5
TP903	F-3
X501	A-1
X601	B-4
X602	B-6

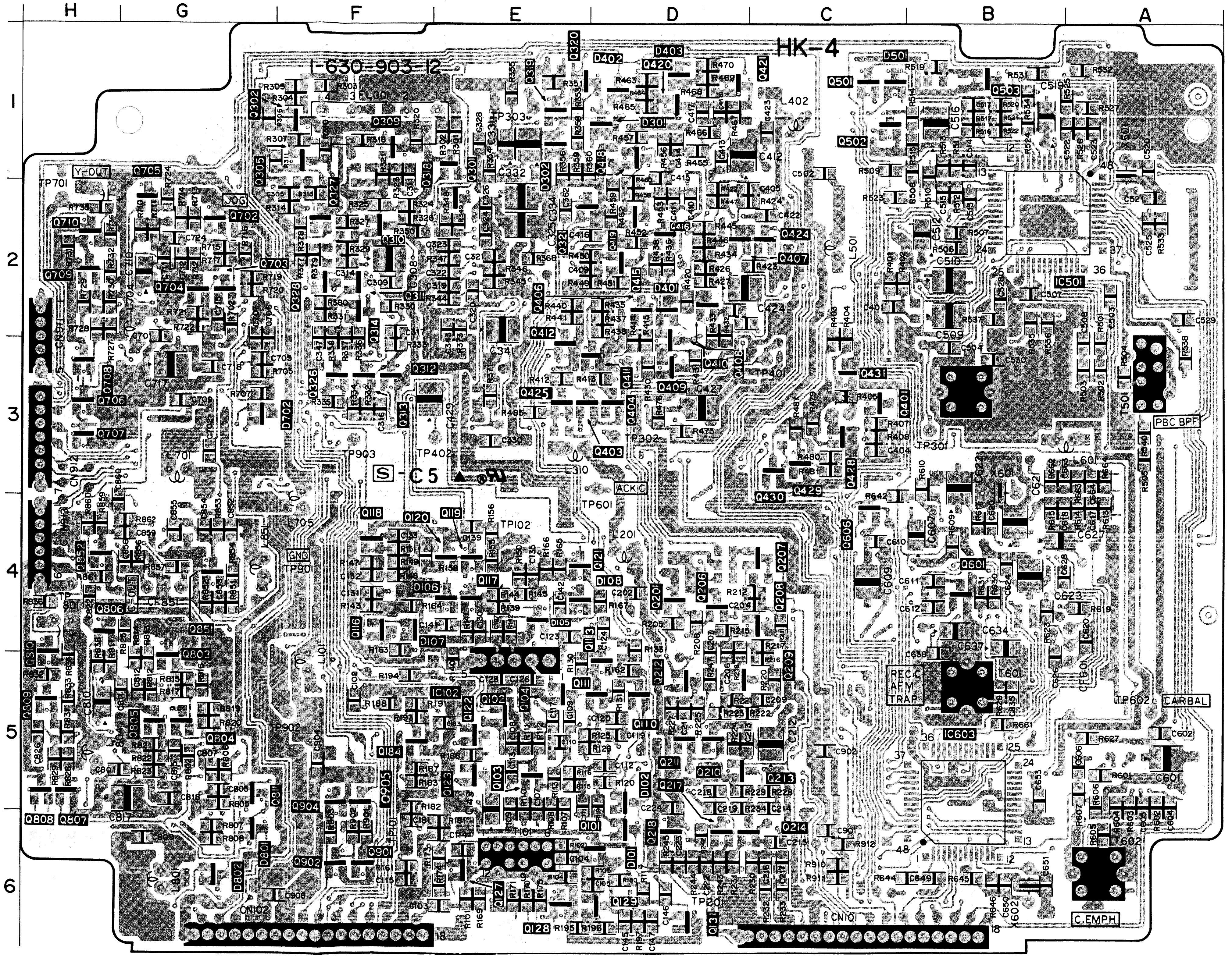
HK-4(1-630-903-11, 12)S

CN913	H-4
D101	D-6
D102	D-5
D105	E-4
D106	E-4
D107	F-4
D108	E-4
D301	D-1
D302	E-1
D401	D-2
D402	D-1
D403	D-1
D501	C-1
D702	G-3
D801	G-6
D802	G-6
IC501	B-2
IC603	B-5
Q101	D-6
Q102	E-5
Q103	E-5
Q104	E-5
Q110	D-5
Q111	D-5
Q113	D-5
Q116	F-4
Q117	E-4
Q118	F-4
Q119	E-4
Q120	E-4
Q121	E-4
Q122	E-5
Q123	E-5
Q127	E-6
Q128	E-6
Q129	D-6
Q131	D-6
Q184	F-5
Q201	D-4
Q206	D-4
Q207	C-4
Q208	C-4
Q209	D-5
Q210	D-5
Q211	D-5
Q212	D-5
Q213	D-5
Q214	C-6
Q217	D-6
Q218	D-6
Q301	E-2
Q302	F-1
Q305	F-1
Q309	F-1
Q310	F-2
Q311	F-2
Q312	F-3
Q313	F-3
Q314	F-2
Q318	E-1
Q319	E-1
Q320	E-1
Q321	E-2
Q326	F-3
Q327	F-2
Q328	F-2
Q401	C-3
Q403	D-3
Q404	D-3
Q406	D-2
Q407	C-2
Q408	D-2
Q409	D-3
Q410	D-3
Q411	D-3
Q412	E-3
Q415	D-2
Q416	D-2
Q418	D-1
Q419	D-2
Q420	D-1
Q421	D-1
Q424	C-2
Q425	E-3
Q428	C-3
Q429	C-3
Q430	C-3
Q431	C-3
Q501	C-1
Q502	C-1
Q503	B-1
Q601	B-4
Q606	C-4
Q702	G-2
Q703	G-2
Q704	G-2
Q705	G-2
Q706	H-3
Q707	H-3
Q708	H-3
Q709	H-2
Q710	H-2
Q803	G-5
Q804	G-5
Q805	G-5
Q806	H-4
Q807	H-5
Q808	H-5
Q809	H-5
Q810	H-5
Q811	G-5
Q851	G-4
Q852	H-4
Q901	F-6
Q902	F-6
Q904	F-5
Q905	F-5


A
B
C
D
E
F
1
2
3
4
5
6
HK-4
1-630-903-12
MADE IN JAPAN
L504
L402
RV302
TP303
L309
C501
Q323
Q322
Q417
C.DL FILTER
Q405
RV402
FL401
RV304
RV305
Q324
Q317
TP402
C329
TP903
Q402
Q423
RV302
CV601 3.58 TP301
TP601
TP102
Q204
Q219
RV602
IC602
Q605
Q604
IC102
RV101
Q602
TP602
CAR BAL
Q215
Q105
Q903
Q182
Q181
Q107
IC601
L602
T602
C.EMPH
X602
Q607
CN101
TP201
Q130
Q125
Q126

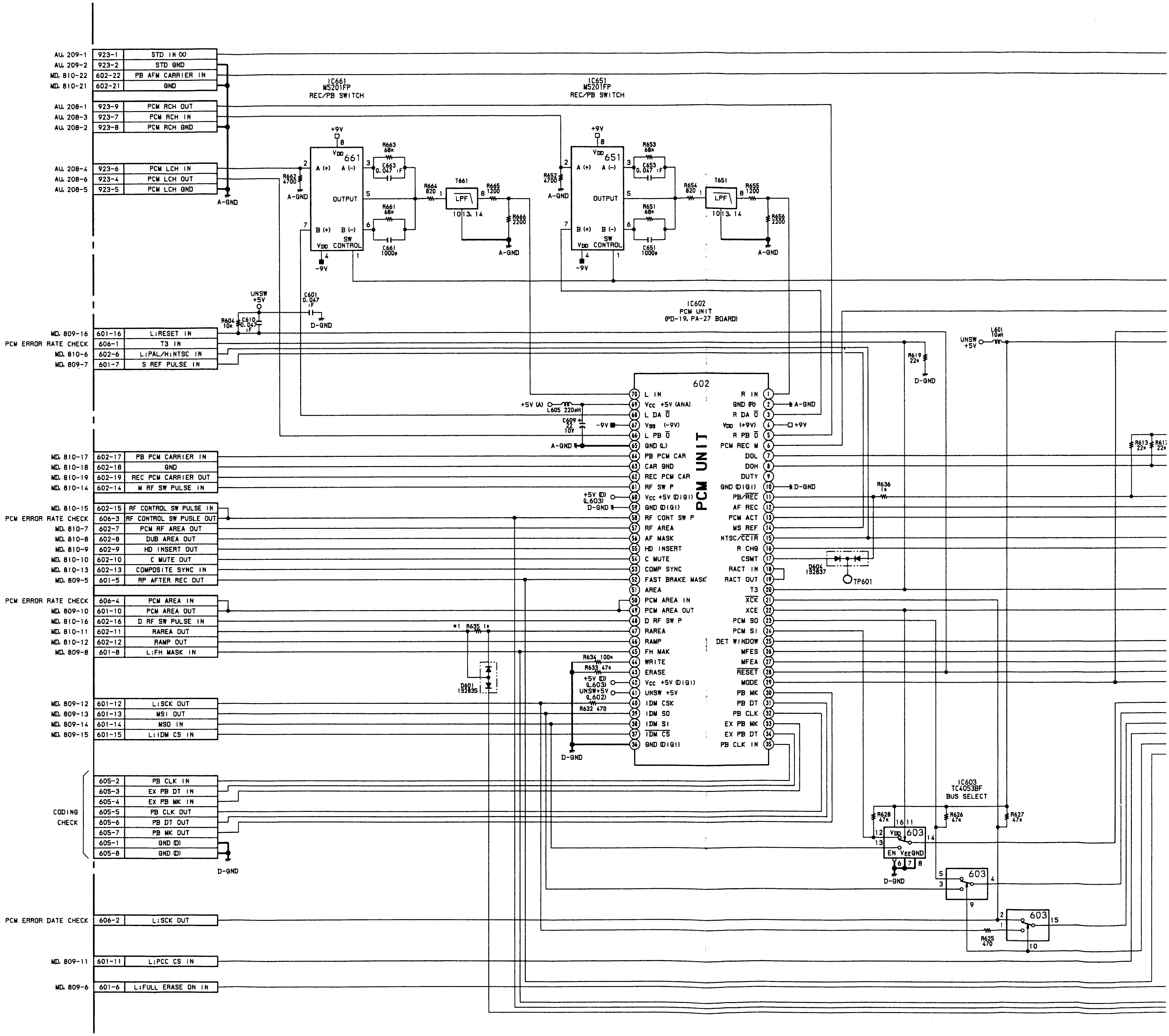

E
F
G
H
MADE IN JAPAN
FL301
TP402
TP903
TP902
TP101
TP102
TP701
TP801
Y-OUT
C-OUT
JOG
GND
IC102
IC851
CN102
CN911
CN912
CN914
RV101
RV301
RV304
RV305
RV701
RV702
CF851

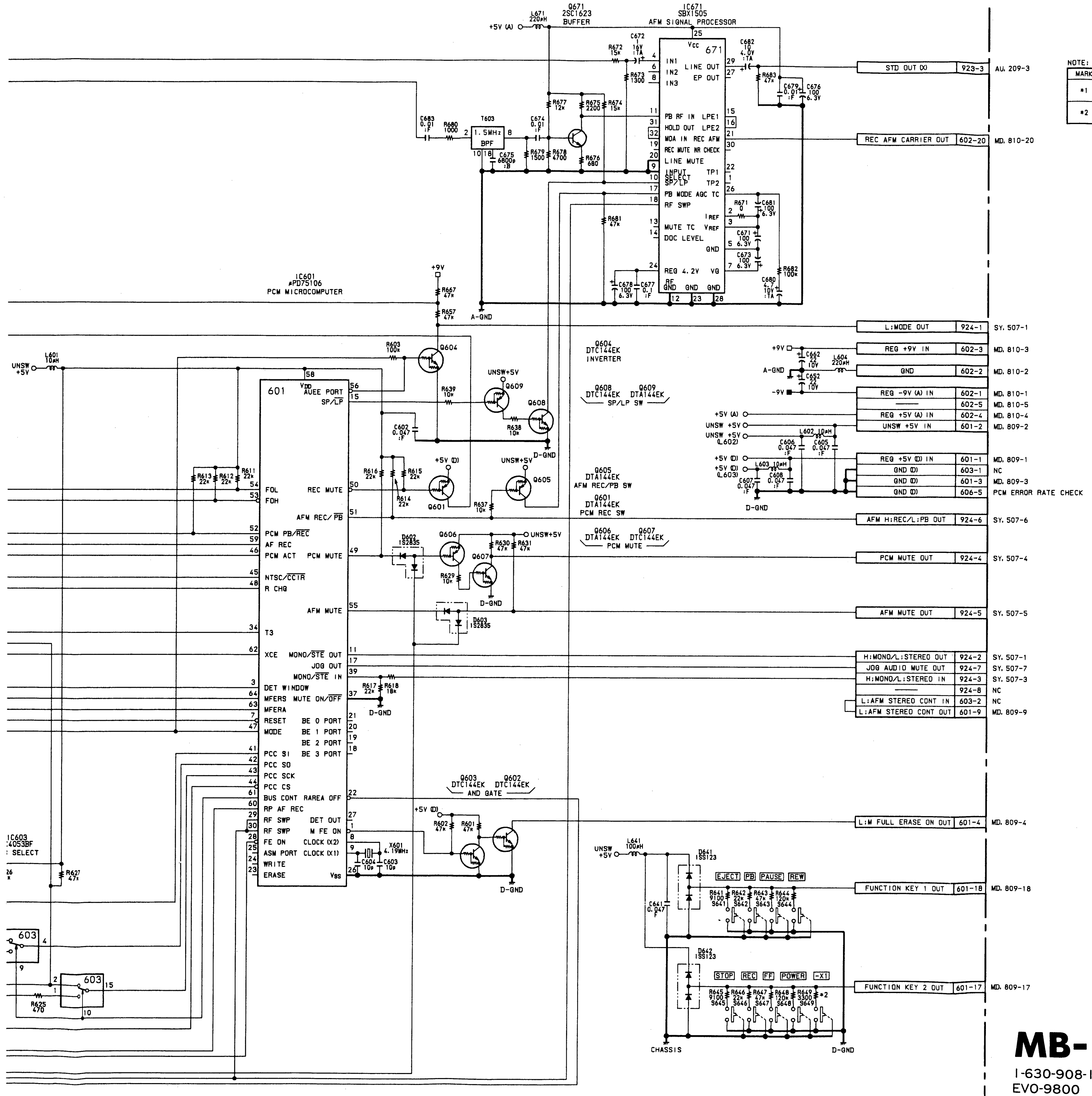
HK-4 —COMPONENT SIDE—
1-630-903-11, 12(1)
EVO-9800


H
G
F
E
D
C
B
A
1
2
3
4
5
6
HK-4
1-630-903-12
S-C5
Y-OUT
JOG
GND
ACKIC
PBC BPF
REC C AFM TRAP
CARBAL
C.EMPH
TP201
TP301
TP302
TP303
TP401
TP402
TP601
TP602
TP701
TP801
TP901
TP902
TP903
IC102
IC501
IC603
CN101
CN102
CN911
CN912
CN913
X601
X602
T501
T601
L501
L601
FL301

HK-4 —SOLDERING SIDE—
1-630-903-11, 12(1)
EVO-9800

MB-19 ; PCM AUDIO


AU. 209-1 923-1 STD IN 00
AU. 209-2 923-2 STD GND
MD. 810-22 602-22 PB AFM CARRIER IN
MD. 810-21 602-21 GND
AU. 208-1 923-9 PCM RCH OUT
AU. 208-3 923-7 PCM RCH IN
AU. 208-2 923-8 PCM RCH GND
AU. 208-4 923-6 PCM LCH IN
AU. 208-6 923-4 PCM LCH OUT
AU. 208-5 923-5 PCM LCH GND
A-GND
IC661 M5201FP REC/PB SWITCH
IC651 M5201FP REC/PB SWITCH
+9V
-9V
A (+) A (-)
OUTPUT
B (+) B (-)
SW CONTROL
LPF
T661
T651
R662 4700
R663 68k
C663 0.047 μF
R664 820
R665 1200
R661 68k
C661 1000p
R666 2200
R652 4700
R653 68k
C653 0.047 μF
R654 820
R655 1200
R651 68k
C651 1000p
R656 2200
UNSW +5V
C601 0.047 μF
R604 10k
C610 0.047 μF
D-GND
IC602 PCM UNIT (PD-19, PA-27 BOARD)
MD. 809-16 601-16 L:RESET IN
PCM ERROR RATE CHECK 606-1 T3 IN
MD. 810-6 602-6 L:PAL/H:NTSC IN
MD. 809-7 601-7 S REF PULSE IN
MD. 810-17 602-17 PB PCM CARRIER IN
MD. 810-18 602-18 GND
MD. 810-19 602-19 REC PCM CARRIER OUT
MD. 810-14 602-14 M RF SW PULSE IN
MD. 810-15 602-15 RF CONTROL SW PULSE IN
PCM ERROR RATE CHECK 606-3 RF CONTROL SW PUSLE OUT
MD. 810-7 602-7 PCM RF AREA OUT
MD. 810-8 602-8 DUB AREA OUT
MD. 810-9 602-9 HD INSERT OUT
MD. 810-10 602-10 C MUTE OUT
MD. 810-13 602-13 COMPOSITE SYNC IN
MD. 809-5 601-5 RP AFTER REC OUT
PCM ERROR RATE CHECK 606-4 PCM AREA IN
MD. 809-10 601-10 PCM AREA OUT
MD. 810-16 602-16 D RF SW PULSE IN
MD. 810-11 602-11 RAREA OUT
MD. 810-12 602-12 RAMP OUT
MD. 809-8 601-8 L:FH MASK IN
MD. 809-12 601-12 L:SCK OUT
MD. 809-13 601-13 MSI OUT
MD. 809-14 601-14 MSO IN
MD. 809-15 601-15 L:IDM CS IN
CODING CHECK
605-2 PB CLK IN
605-3 EX PB DT IN
605-4 EX PB MK IN
605-5 PB CLK OUT
605-6 PB DT OUT
605-7 PB MK OUT
605-1 GND (D)
605-8 GND (D)
PCM ERROR DATE CHECK 606-2 L:SCK OUT
MD. 809-11 601-11 L:PCC CS IN
MD. 809-6 601-6 L:FULL ERASE ON IN
602
PCM UNIT
70 L IN
69 Vcc +5V (ANA)
68 L DA Ō
67 Vss (-9V)
66 L PB Ō
65 GND (L)
64 PB PCM CAR
63 CAR GND
62 REC PCM CAR
61 RF SW P
60 Vcc +5V (DIGI)
59 GND (DIGI)
58 RF CONT SW P
57 RF AREA
56 AF MASK
55 HD INSERT
54 C MUTE
53 COMP SYNC
52 FAST BRAKE MASK
51 AREA
50 PCM AREA IN
49 PCM AREA OUT
48 D RF SW P
47 RAREA
46 RAMP
45 FH MAK
44 WRITE
43 ERASE
42 Vcc +5V (DIGI)
41 UNSW +5V
40 IDM CSK
39 IDM SO
38 IDM SI
37 IDM CS
36 GND (DIGI)
1 R IN
2 GND (R)
3 R DA Ō
4 VDD (+9V)
5 R PB Ō
6 PCM REC M
7 DOL
8 DOH
9 DUTY
10 GND (DIGI)
11 PB/REC
12 AF REC
13 PCM ACT
14 MS REF
15 NTSC/CCIR
16 R CHG
17 CSMT
18 RACT IN
19 RACT OUT
20 T3
21 XCK
22 XCE
23 PCM SO
24 PCM SI
25 DET WINDOW
26 MFES
27 MFEA
28 RESET
29 MODE
30 PB MK
31 PB DT
32 PB CLK
33 EX PB MK
34 EX PB DT
35 PB CLK IN
+5V (A)
L605 220μH
C609 22 10V
+5V (D) (L603)
UNSW+5V (L602)
R634 100k
R633 47k
R632 470
*1 R635 1k
D601 1SS83S
R636 1k
D604 1SS83T
TP601
R619 22k
UNSW +5V
L601 10μH
R613 22k
R612 22k
IC603 TC4053BF BUS SELECT
R628 47k
R626 47k
R627 47k
R625 470
603
VDD
EN VEE GND
16 11 12 13 14 6 7 8 5 3 4 9 2 1 15 10


IC671
SBX1505
AFM SIGNAL PROCESSOR
Q671
2SC1623
BUFFER
+5V (A)
L671 220µH
T603
1.5MHz BPF
IN1
IN2
IN3
LINE OUT
EP OUT
PB RF IN LPE1
HOLD OUT LPE2
MDA IN REC AFM
REC MUTE NR CHECK
LINE MUTE
INPUT SELECT TP1
SP/LP TP2
PB MODE AGC TC
RF SWP
IREF
MUTE TC VREF
DOC LEVEL
GND
REG 4.2V VG
RF GND GND GND
A-GND
IC601
µPD75106
PCM MICROCOMPUTER
+9V
UNSW +5V
L601 10µH
601
VDD
AUEE PORT
SP/LP
FOL
FOH
REC MUTE
AFM REC/PB
PCM PB/REC
AF REC
PCM ACT PCM MUTE
NTSC/CCIR
R CHG
AFM MUTE
T3
XCE MONO/STE OUT
JOG OUT
MONO/STE IN
DET WINDOW
MFERS MUTE ON/OFF
MFERA
RESET BE 0 PORT
MODE BE 1 PORT
BE 2 PORT
PCC SI BE 3 PORT
PCC SO
PCC SCK
PCC CS
BUS CONT RAREA OFF
RP AF REC
RF SWP DET OUT
RF SWP M FE ON
FE ON CLOCK (X2)
ASM PORT CLOCK (X1)
WRITE
ERASE VSS
X601 4.19MHz
Q604
DTC144EK
INVERTER
Q608 DTA144EK
Q609 DTA144EK
SP/LP SW
Q605
DTA144EK
AFM REC/PB SW
Q601
DTA144EK
PCM REC SW
Q606 DTA144EK
Q607 DTC144EK
PCM MUTE
D602 1S2835
D603 1S2835
Q603 DTC144EK
Q602 DTC144EK
AND GATE
UNSW+5V
+5V (D)
D-GND
-9V
+5V (A)
UNSW +5V (L602)
+5V (D) (L603)
L604 220µH
L641 100µH
D641 1SS123
D642 1SS123
EJECT
PB
PAUSE
REW
STOP
REC
FF
POWER
-X1
*2
CHASSIS
IC603
4053BF
SELECT
603
STD OUT (X) 923-3 AU. 209-3
REC AFM CARRIER OUT 602-20 MD. 810-20
L:MODE OUT 924-1 SY. 507-1
REG +9V IN 602-3 MD. 810-3
GND 602-2 MD. 810-2
REG -9V (A) IN 602-1 MD. 810-1
—— 602-5 MD. 810-5
REG +5V (A) IN 602-4 MD. 810-4
UNSW +5V IN 601-2 MD. 809-2
REG +5V (D) IN 601-1 MD. 809-1
GND (D) 603-1 NC
GND (D) 601-3 MD. 809-3
GND (D) 606-5 PCM ERROR RATE CHECK
AFM H:REC/L:PB OUT 924-6 SY. 507-6
PCM MUTE OUT 924-4 SY. 507-4
AFM MUTE OUT 924-5 SY. 507-5
H:MONO/L:STEREO OUT 924-2 SY. 507-1
JOG AUDIO MUTE OUT 924-7 SY. 507-7
H:MONO/L:STEREO IN 924-3 SY. 507-3
—— 924-8 NC
L:AFM STEREO CONT IN 603-2 NC
L:AFM STEREO CONT OUT 601-9 MD. 809-9
L:M FULL ERASE ON OUT 601-4 MD. 809-4
FUNCTION KEY 1 OUT 601-18 MD. 809-18
FUNCTION KEY 2 OUT 601-17 MD. 809-17

NOTE:

MARK	CHANGE INFORMATION	SERIAL NO
*1	R635 CHANGED 4.7K → 1K	J:10061- UC:10341-
*2	R649 CHANGED 2.7K → 3.3K	J:10381- UC:11271-

MB-19

1-630-908-11, 12, 13(2)
EVO-9800
EVO-9800P

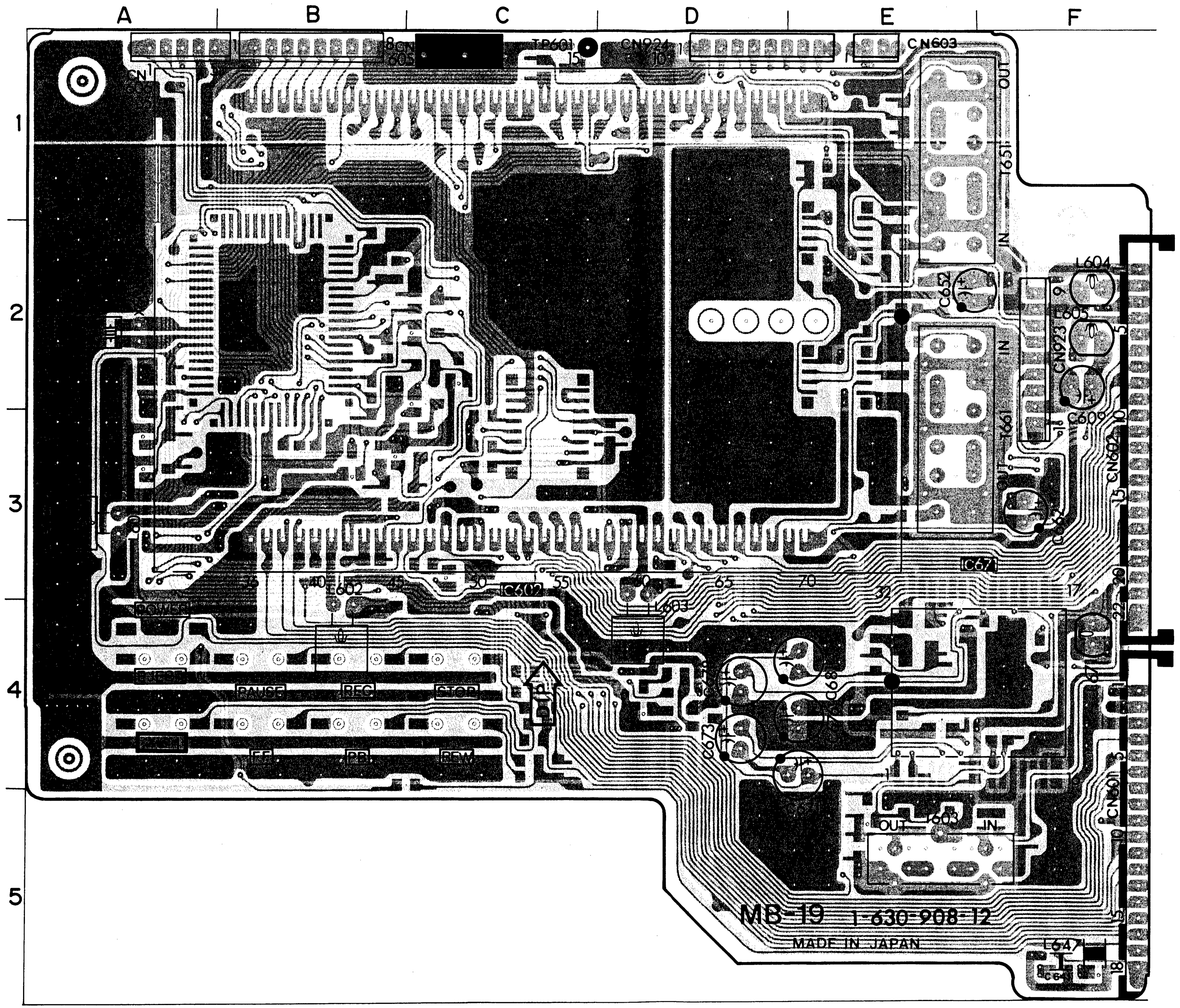
MB-19 ; PCM AUDIO

MB-19(1-630-908-11,12,13)C

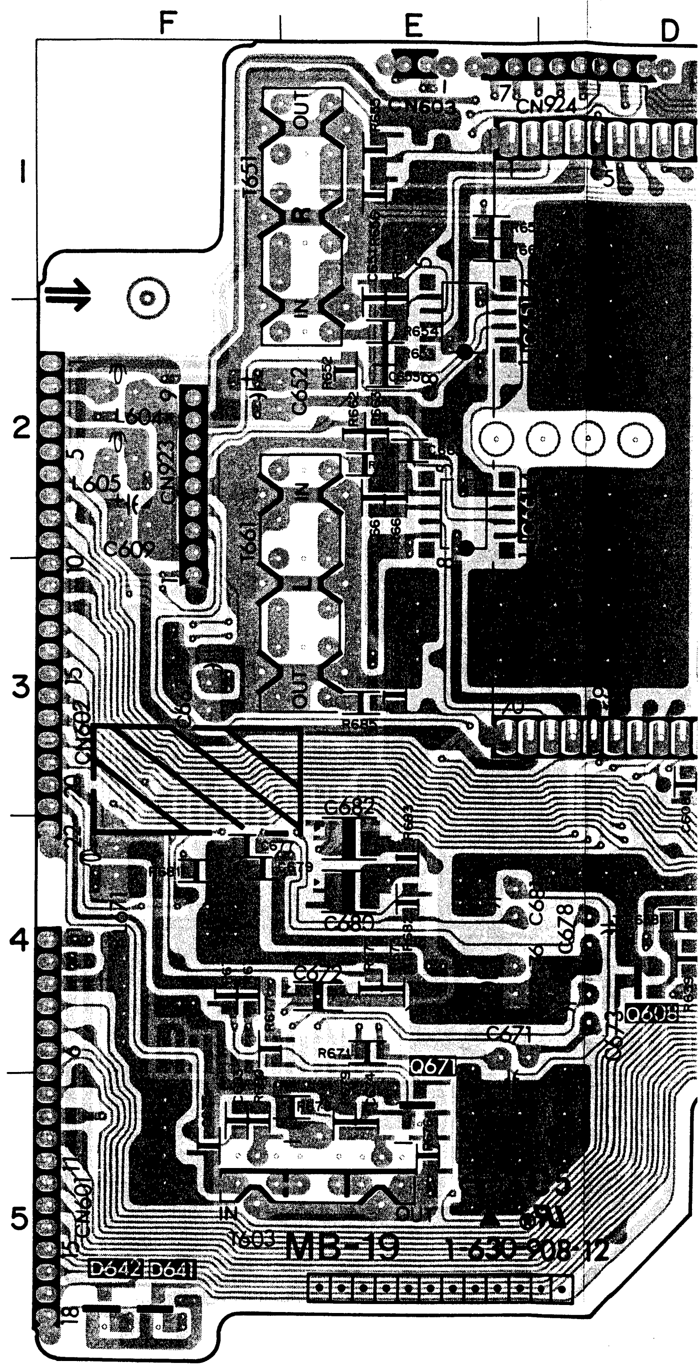
CN601	F-5
CN602	F-3
CN603	E-1
CN605	B-1
CN606	A-1
CN923	F-2
CN924	D-1
IC602	C-3
IC671	E-4
T603	E-5
T651	E-1
T661	E-3
TP601	C-1

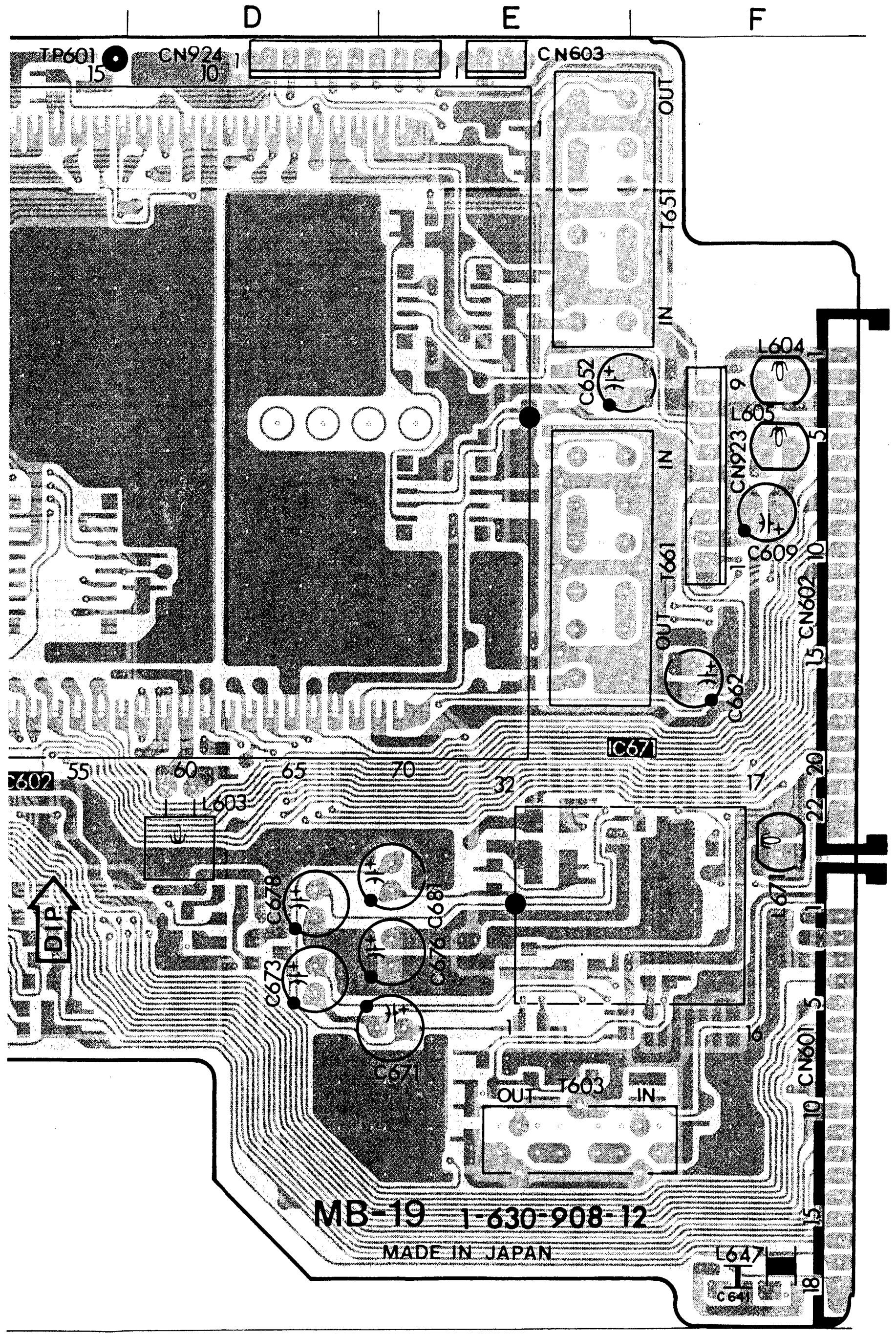
MB-19(1-630-908-11,12,13)S

D601	C-3
D602	C-2
D603	C-2
D604	C-1
D641	F-5
D642	F-5
IC601	B-2
IC603	C-2
IC651	E-2
IC661	E-2
Q601	B-3
Q602	A-3
Q603	A-3
Q604	C-2
Q605	C-2
Q606	C-3
Q607	B-3
Q608	D-4
Q609	D-4
Q671	E-5
S641	A-4
S642	B-4
S643	B-4
S644	C-4
S645	C-4
S646	B-4
S647	B-4
S648	A-4
S649	A-4

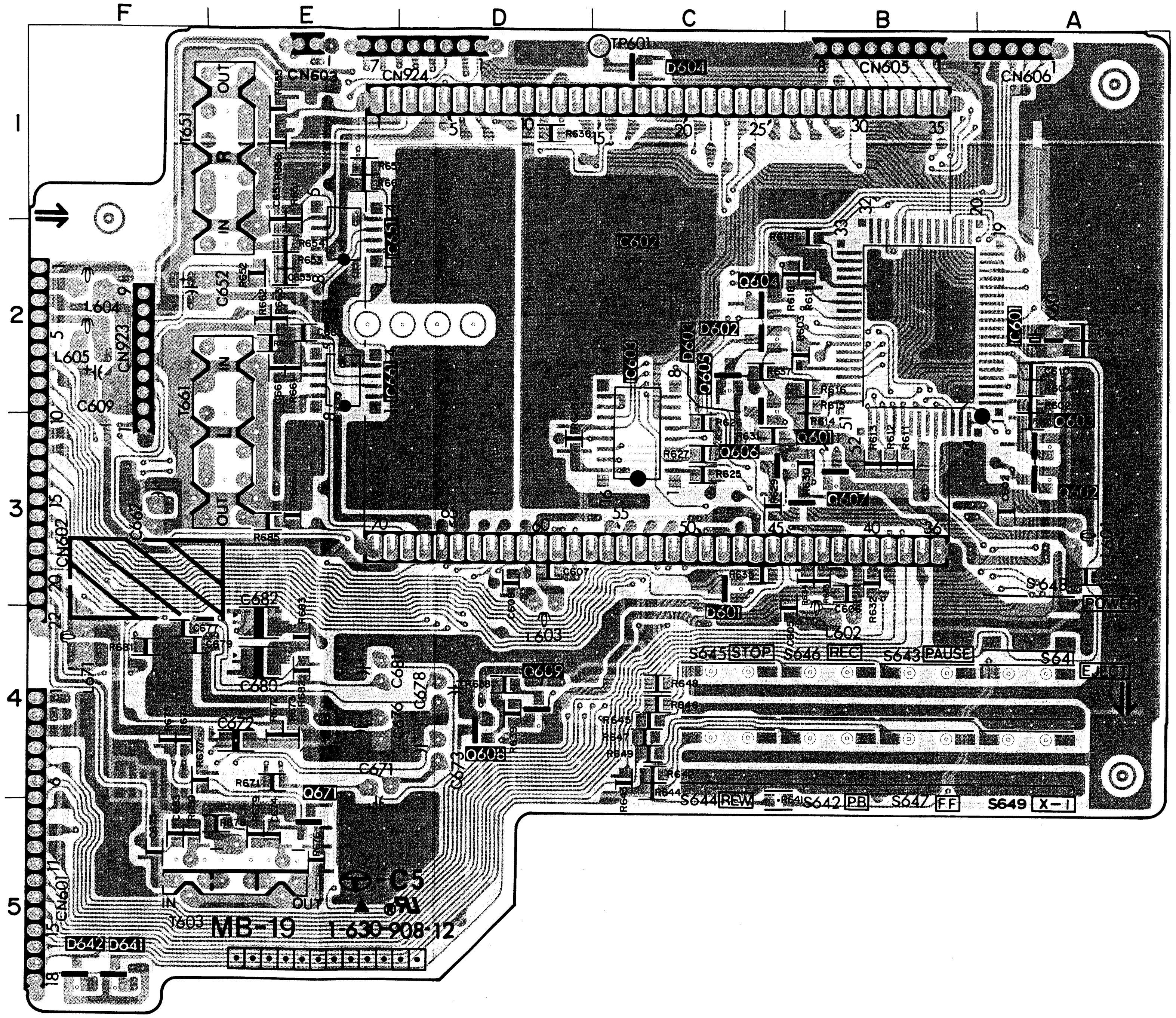

A
B
C
D
E
F
1
2
3
4
5
CN603
TP601
CN924
CN923
CN602
CN601
L604
L605
C609
C652
T651
T661
IC671
IC602
IC603
C673
C681
PAUSE
REC
STOP
FF
PB
REW
L647
MB-19 1-630-908-12
MADE IN JAPAN

MB-19 —COMPONENT SIDE—
1-630-908-11, 12, 13(1)
EVO-9800
EVO-9800P


F
E
D
1
2
3
4
5
CN603
CN924
CN923
CN601
L604
L605
C609
C652
T651
T661
T603
C682
C680
C678
C672
C671
Q671
Q608
R671
D642
D641
MB-19 1-630-908-12

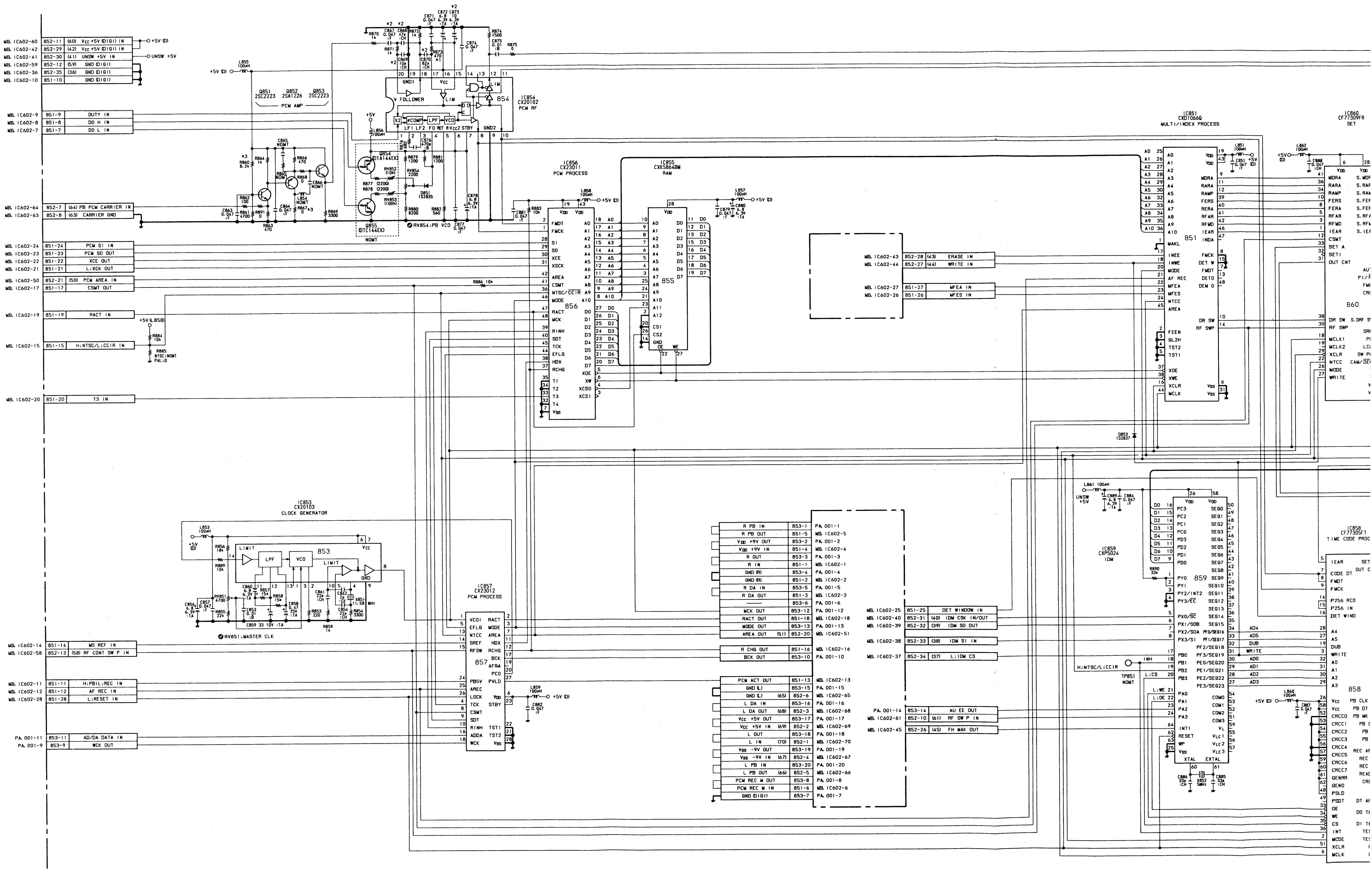

D
E
F
TP601
CN924
CN603
T651
L604
L605
CN923
C652
C609
T661
CN602
C662
IC671
L603
C678
C676
C673
C68
C671
D602
DIP
T603
OUT
IN
CN601
L647
C641
MB-19 1-630-908-12
MADE IN JAPAN

MB-19 —COMPONENT SIDE—
1-630-908-11, 12, 13(1)
EVO-9800
EVO-9800P


F
E
D
C
B
A
1
2
3
4
5
TP601
D604
CN603
CN924
CN605
CN606
T651
IC602
IC651
Q604
D602
D603
Q605
IC603
Q606
Q601
Q607
C601
Q602
L604
L605
CN923
C609
C652
T661
CN602
C662
C682
C680
C681
C678
C676
C673
C671
C672
Q671
Q609
Q608
L603
D601
L602
S648
POWER
S645 STOP
S646 REC
S643 PAUSE
S641 EJECT
S644 REW
S642 PB
S647 FF
S649 X-1
CN601
D642
D641
T603
IN
OUT
MB-19 1-630-908-12

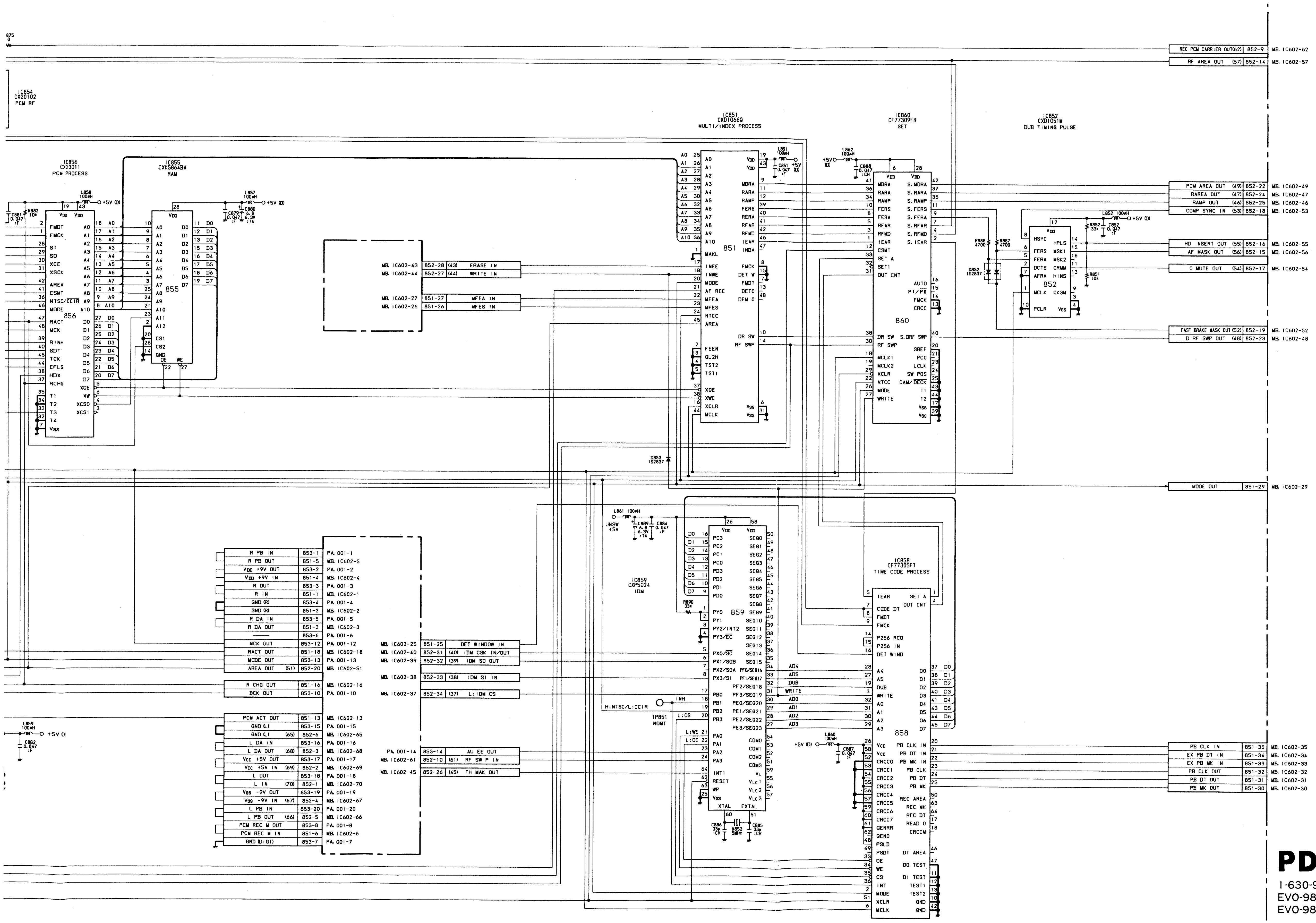
MB-19 —SOLDERING SIDE—
1-630-908-11, 12, 13(1)
EVO-9800
EVO-9800P

PD-19; PCM AUDIO DIGITAL


IC854 CX20102 PCM RF
Q851 2SC2223
Q852 2SA1226
Q853 2SC2223
PCM AMP
Q854 (DTA144EK)
Q855 (DTC144EK)
NOMT
RV854;PB VCO
IC856 CX23011 PCM PROCESS
IC855 CXK5864BM RAM
IC851 CXD1066Q MULTI/INDEX PROCESS
IC860 CF77309FR SET
IC853 CX20103 CLOCK GENERATOR
RV851;MASTER CLK
IC857 CX23012 PCM PROCESS
IC859 CXP5024 IDM
IC858 CF77305FT TIME CODE PROC
MB. IC602-60
852-11 (60) Vcc +5V (DIGI) IN
852-29 (42) Vcc +5V (DIGI) IN
852-30 (41) UNSW +5V IN
852-12 (59) GND (DIGI)
852-35 (36) GND (DIGI)
851-10 GND (DIGI)
851-9 DUTY IN
851-8 DO H IN
851-7 DO L IN
852-7 (64) PB PCM CARRIER IN
852-8 (63) CARRIER GND
851-24 PCM SI IN
851-23 PCM SO OUT
851-22 XCE OUT
851-21 L:XCK OUT
852-21 (50) PCM AREA IN
851-17 CSMT OUT
851-19 RACT IN
851-15 H:NTSC/L:CCIR IN
851-20 T3 IN
851-14 MS REF IN
852-13 (58) RF CONT SW P IN
851-11 H:PBIL:REC IN
851-12 AF REC IN
851-28 L:RESET IN
853-11 AD/DA DATA IN
853-9 WCK OUT
852-28 (43) ERASE IN
852-27 (44) WRITE IN
851-27 MFEA IN
851-26 MFES IN
851-25 DET WINDOW IN
852-31 (40) IDM CSK IN/OUT
852-32 (39) IDM SO OUT
852-33 (38) IDM SI IN
852-34 (37) L:IDM CS
853-14 AU EE OUT
852-10 (61) RF SW P IN
852-26 (45) FH MAK OUT
R PB IN
R PB OUT
Vpp +9V OUT
Vpp +9V IN
R OUT
R IN
GND (R)
R DA IN
R DA OUT
MCK OUT
RACT OUT
MODE OUT
AREA OUT
R CHG OUT
BCK OUT
PCM ACT OUT
GND (L)
L DA IN
L DA OUT
Vcc +5V OUT
Vcc +5V IN
L OUT
L IN
Vss -9V OUT
Vss -9V IN
L PB IN
L PB OUT
PCM REC M OUT
PCM REC M IN
GND (DIGI)
+5V (D)
UNSW +5V
H:NTSC/L:CCIR
TP851 NOMT
D853 1S2837
D851 1S2835
A
B
C
D
E
F
G
H

NOTE;

MARK	CHANGE INFORMATION	SERIAL NO
*1	R783 CHANGED 820 → 470	J;10381- UC;11071-
*2	CHANGED C687 0.01 → 0.047 C868 18P → 47P C869 22P → 10P C870 47P → 82P C873 6.8/10V → 10/6.3V	J;10381- UC;11271-
*3	CHANGED R860 11K → 8.2K R867 470 → 0	J;10381- UC;11671- EK;10101-

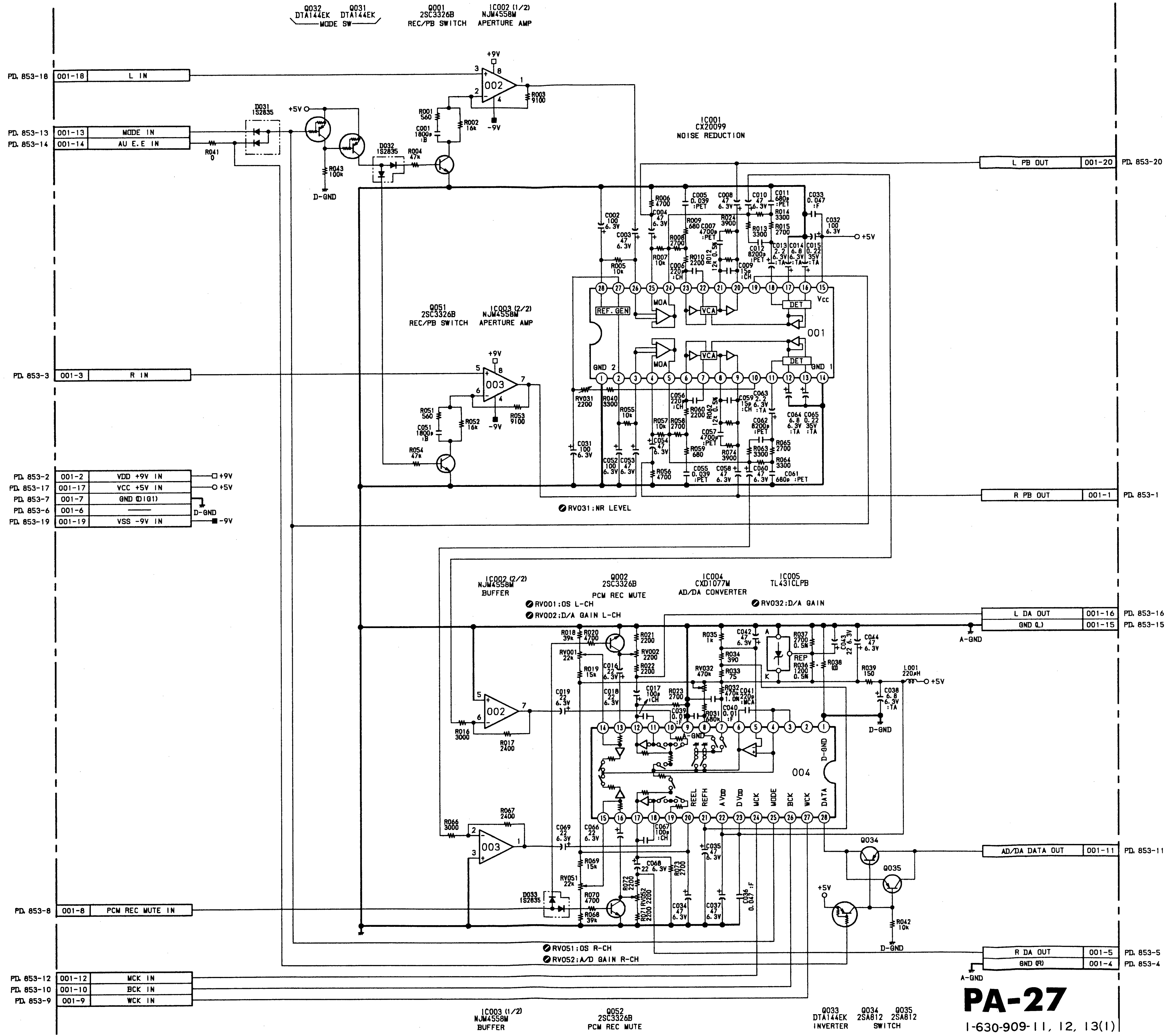


IC854 CX20102 PCM RF
IC856 CX23011 PCM PROCESS
IC855 CXK5864BM RAM
IC851 CXD1066Q MULTI/INDEX PROCESS
IC860 CF77309FR SET
IC852 CXD1051M DUB TIMING PULSE
IC859 CXP5024 IDM
IC858 CF77305FT TIME CODE PROCESS
856
855
851
860
852
859
858
REC PCM CARRIER OUT(62) 852-9 MB IC602-62
RF AREA OUT (57) 852-14 MB IC602-57
PCM AREA OUT (49) 852-22 MB IC602-49
RAREA OUT (47) 852-24 MB IC602-47
RAMP OUT (46) 852-25 MB IC602-46
COMP SYNC IN (53) 852-18 MB IC602-53
HD INSERT OUT (55) 852-16 MB IC602-55
AF MASK OUT (56) 852-15 MB IC602-56
C MUTE OUT (54) 852-17 MB IC602-54
FAST BRAKE MASK OUT (52) 852-19 MB IC602-52
D RF SWP OUT (48) 852-23 MB IC602-48
MODE OUT 851-29 MB IC602-29
PB CLK IN 851-35 MB IC602-35
EX PB DT IN 851-34 MB IC602-34
EX PB MK IN 851-33 MB IC602-33
PB CLK OUT 851-32 MB IC602-32
PB DT OUT 851-31 MB IC602-31
PB MK OUT 851-30 MB IC602-30
MB IC602-43 852-28 (43) ERASE IN
MB IC602-44 852-27 (44) WRITE IN
MB IC602-27 851-27 MFEA IN
MB IC602-26 851-26 MFES IN
MB IC602-25 851-25 DET WINDOW IN
MB IC602-40 852-31 (40) IDM CSK IN/OUT
MB IC602-39 852-32 (39) IDM SO OUT
MB IC602-38 852-33 (38) IDM SI IN
MB IC602-37 852-34 (37) L:IDM CS
PA 001-14 853-14 AU EE OUT
MB IC602-61 852-10 (61) RF SW P IN
MB IC602-45 852-26 (45) FH MAK OUT
R PB IN 853-1 PA 001-1
R PB OUT 851-5 MB IC602-5
VDD +9V OUT 853-2 PA 001-2
VDD +9V IN 851-4 MB IC602-4
R OUT 853-3 PA 001-3
R IN 851-1 MB IC602-1
GND (R) 853-4 PA 001-4
GND (R) 851-2 MB IC602-2
R DA IN 853-5 PA 001-5
R DA OUT 851-3 MB IC602-3
853-6 PA 001-6
MCK OUT 853-12 PA 001-12
RACT OUT 851-18 MB IC602-18
MODE OUT 853-13 PA 001-13
AREA OUT (51) 852-20 MB IC602-51
R CHG OUT 851-16 MB IC602-16
BCK OUT 853-10 PA 001-10
PCM ACT OUT 851-13 MB IC602-13
GND (L) 853-15 PA 001-15
GND (L) (65) 852-6 MB IC602-65
L DA IN 853-16 PA 001-16
L DA OUT (68) 852-3 MB IC602-68
VCC +5V OUT 853-17 PA 001-17
VCC +5V IN (69) 852-2 MB IC602-69
L OUT 853-18 PA 001-18
L IN (70) 852-1 MB IC602-70
VSS -9V OUT 853-19 PA 001-19
VSS -9V IN (67) 852-4 MB IC602-67
L PB IN 853-20 PA 001-20
L PB OUT (66) 852-5 MB IC602-66
PCM REC M OUT 853-8 PA 001-8
PCM REC M IN 851-6 MB IC602-6
GND (DIGI) 853-7 PA 001-7
L858 100µH
L857 100µH
L851 100µH
L862 100µH
L852 100µH
L861 100µH
L860 100µH
L859 100µH
+5V (D)
UNSW +5V
D853 1S2837
D852 1S2837
X852 5MHz
TP851 NOMT
H:NTSC/L:CCIR

PD-19

1-630-910-11, 12, 13(2)
EVO-9800
EVO-9800P

PA-27; PCM AUDIO ANALOG


Q032 DTA144EK
Q031 DTA144EK
MODE SW
Q001 2SC3326B REC/PB SWITCH
IC002 (1/2) NJM4558M APERTURE AMP
PD. 853-18
001-18
L IN
PD. 853-13
001-13
MODE IN
PD. 853-14
001-14
AU E.E IN
D031 1S2835
D032 1S2835
+5V
+9V
-9V
D-GND
R043 100k
R041 0
R001 560
C001 1800p :B
R002 16k
R003 9100
R004 47k
IC001 CX20099 NOISE REDUCTION
L PB OUT
001-20
PD. 853-20
REF. GEN
MOA
VCA
DET
Vcc
GND
001
Q051 2SC3326B REC/PB SWITCH
IC003 (2/2) NJM4558M APERTURE AMP
PD. 853-3
001-3
R IN
R051 560
C051 1800p :B
R052 16k
R053 9100
R054 47k
RV031 2200
R040 3300
R055 10k
R PB OUT
001-1
PD. 853-1
RV031: NR LEVEL
PD. 853-2
001-2
VDD +9V IN
PD. 853-17
001-17
VCC +5V IN
PD. 853-7
001-7
GND (DIGI)
PD. 853-6
001-6
PD. 853-19
001-19
VSS -9V IN
IC002 (2/2) NJM4558M BUFFER
Q002 2SC3326B PCM REC MUTE
IC004 CXD1077M AD/DA CONVERTER
IC005 TL431CLPB
RV001: OS L-CH
RV002: D/A GAIN L-CH
RV032: D/A GAIN
L DA OUT
001-16
PD. 853-16
GND (L)
001-15
PD. 853-15
A-GND
L001 220μH
REF
004
REEL
REFH
A VDD
D VDD
MCK
BCK
WCK
DATA
D-GND
Q034
Q035
AD/DA DATA OUT
001-11
PD. 853-11
R042 10k
PD. 853-8
001-8
PCM REC MUTE IN
D033 1S2835
RV051: OS R-CH
RV052: A/D GAIN R-CH
R DA OUT
001-5
PD. 853-5
GND (R)
001-4
PD. 853-4
PD. 853-12
001-12
MCK IN
PD. 853-10
001-10
BCK IN
PD. 853-9
001-9
WCK IN
IC003 (1/2) NJM4558M BUFFER
Q052 2SC3326B PCM REC MUTE
Q033 DTA144EK INVERTER
Q034 2SA812
Q035 2SA812
SWITCH

PA-27

1-630-909-11, 12, 13(1)
EVO-9800
EVO-9800P

PD-19
PA-27

PD-19(1-630-91

CN851	B-1
CN852	C-3
CN853	A-2
D851	A-2
D852	B-2
D853	C-2
IC851	C-2
IC852	B-2
IC856	C-1
IC857	B-1
IC858	D-2
Q851	A-3
RV851	A-2
RV854	A-2
X851	A-1
X852	D-2

PA-27(1-630-90

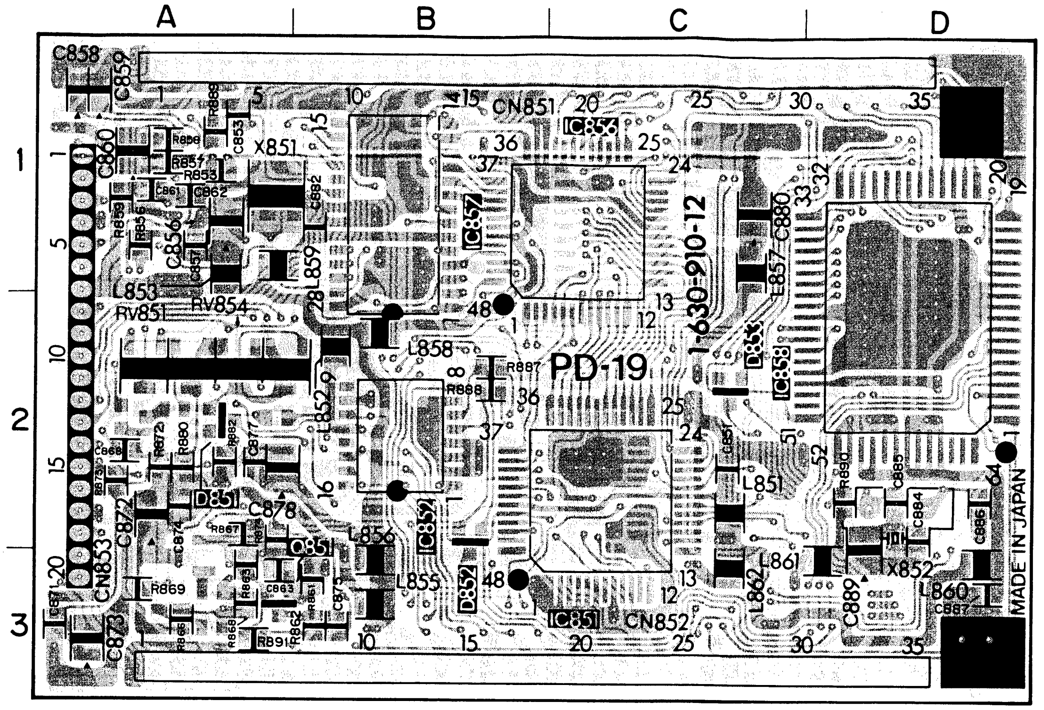
CN001	A-2
D033	B-1
IC001	C-2
IC002	B-3
IC003	B-1
IC004	A-2
IC005	A-2
RV001	B-2
RV002	B-3
RV031	C-1
RV032	A-1
RV051	B-1
RV052	B-1

A | B | C | D | E | F | G | H

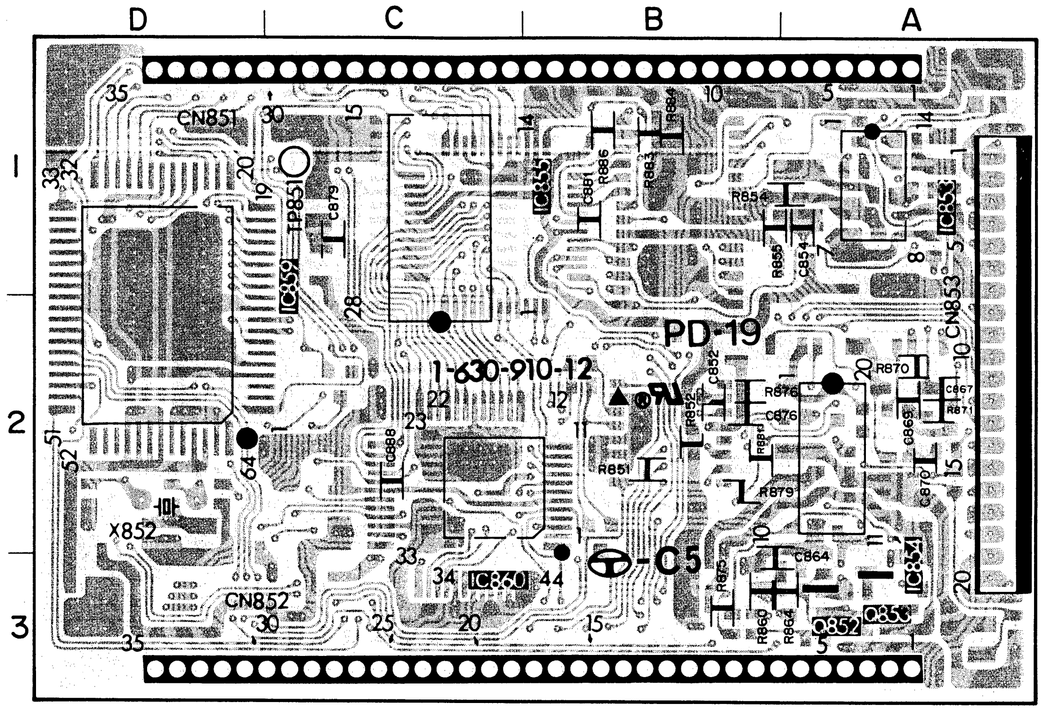
PD-19 ; PCM AUDIO DIGITAL
PA-27 ; PCM AUDIO ANALOG

PD-19(1-630-910-11,12,13)C	
CN851	B-1
CN852	C-3
CN853	A-2
D851	A-2
D852	B-2
D853	C-2
IC851	C-2
IC852	B-2
IC856	C-1
IC857	B-1
IC858	D-2
Q851	A-3
RV851	A-2
RV854	A-2
X851	A-1
X852	D-2

PD-19(1-630-910-11,12,13)S	
IC853	A-1
IC854	A-2
IC855	C-1
IC859	D-1
IC860	C-2
Q852	A-3
Q853	A-3
TP851	C-1


A
B
C
D
1
2
3
CN851
CN852
CN853
PD-19
1-630-910-12
MADE IN JAPAN

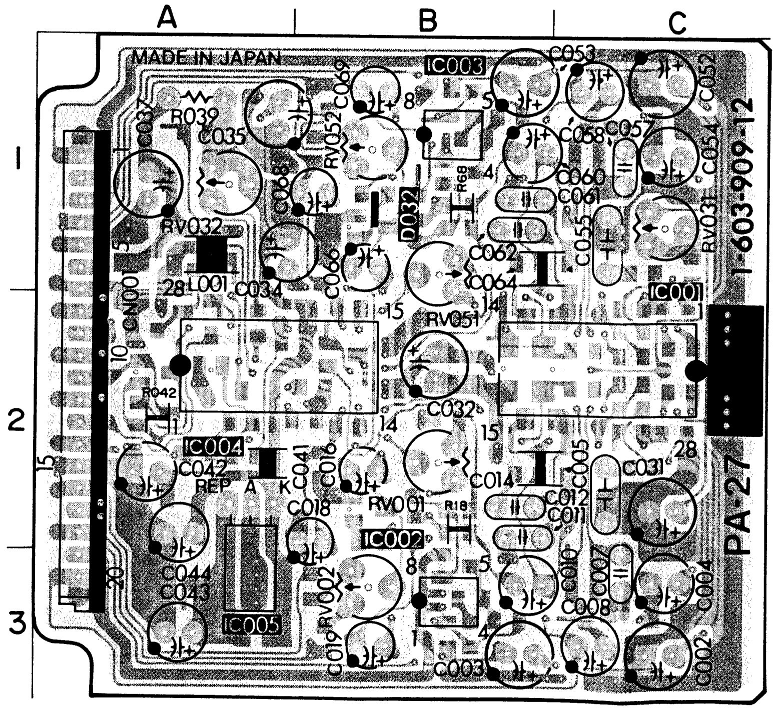
PD-19 —COMPONENT SIDE—
1-630-910-11, 12, 13(1)
EVO-9800
EVO-9800P


D
C
B
A
1
2
3
CN851
CN852
CN853
PD-19
1-630-910-12
TP851

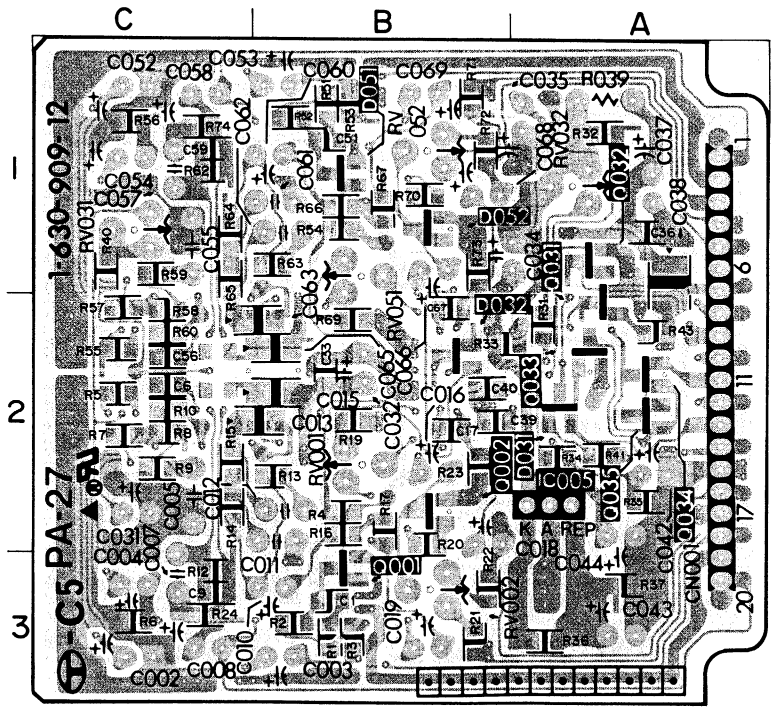
PD-19 —SOLDERING SIDE—
1-630-910-11, 12, 13(1)
EVO-9800
EVO-9800P

PA-27(1-630-909-11,12,13)C	
CN001	A-2
D033	B-1
IC001	C-2
IC002	B-3
IC003	B-1
IC004	A-2
IC005	A-2
RV001	B-2
RV002	B-3
RV031	C-1
RV032	A-1
RV051	B-1
RV052	B-1

PA-27(1-630-909-11,12,13)S	
D031	A-2
D032	B-2
Q001	B-3
Q002	B-2
Q031	A-1
Q032	A-1
Q033	A-2
Q034	A-2
Q035	A-2
Q051	B-1
Q052	B-1


A
B
C
1
2
3
MADE IN JAPAN
PA-27
1-603-909-12
CN001

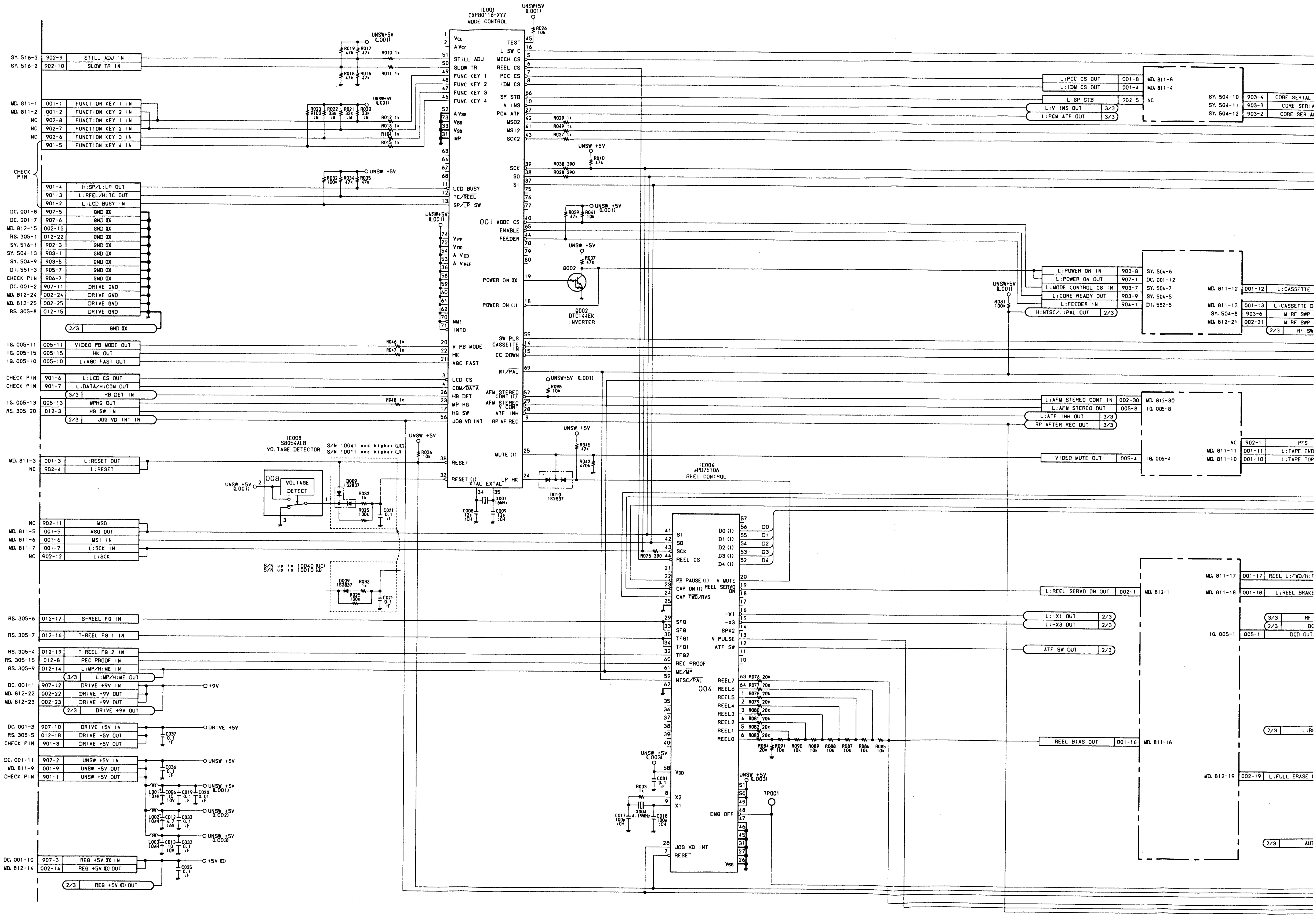
PA-27 —COMPONENT SIDE—
1-630-909-11, 12, 13(1)
EVO-9800
EVO-9800P


C
B
A
1
2
3
PA-27
1-630-909-12
C5
CN001

PA-27 —SOLDERING SIDE—
1-630-909-11, 12, 13(1)
EVO-9800
EVO-9800P

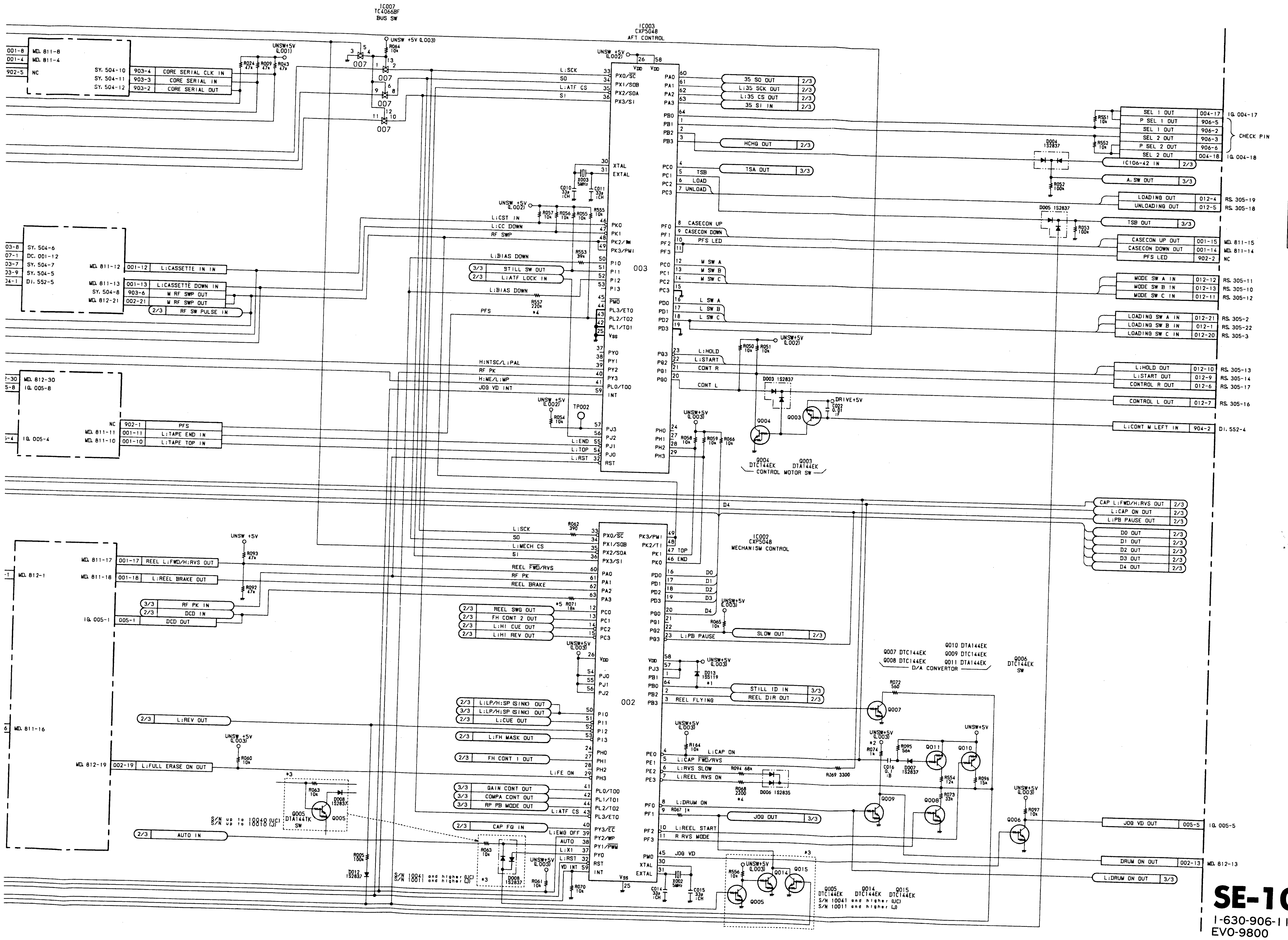
SE-10 (1/3) ;   MODE/MECHANISM/ATF/REEL CONTROL

S/N UP TO 10060 (J)
S/N UP TO 10340 (UC)


IC001
CXP80116-XYZ
MODE CONTROL
IC004
μPD75106
REEL CONTROL
IC008
S8054ALB
VOLTAGE DETECTOR
VOLTAGE DETECT
Q002
DTC144EK
INVERTER
STILL ADJ IN
SLOW TR IN
FUNCTION KEY 1 IN
FUNCTION KEY 2 IN
FUNCTION KEY 3 IN
FUNCTION KEY 4 IN
CHECK PIN
H:SP/L:LP OUT
L:REEL/H:TC OUT
L:LCD BUSY IN
GND
DRIVE GND
VIDEO PB MODE OUT
HK OUT
L:AGC FAST OUT
L:LCD CS OUT
L:DATA/H:COM OUT
HB DET IN
MPHG OUT
HG SW IN
JOG VD INT IN
L:RESET OUT
L:RESET
MSO
MSO OUT
MSI IN
L:SCK IN
L:SCK
S-REEL FG IN
T-REEL FG 1 IN
T-REEL FG 2 IN
REC PROOF IN
L:MP/H:ME IN
L:MP/H:ME OUT
DRIVE +9V IN
DRIVE +9V OUT
DRIVE +5V IN
DRIVE +5V OUT
UNSW +5V IN
UNSW +5V OUT
REG +5V (D) IN
REG +5V (D) OUT
S/N 10041 and higher (UC)
S/N 10011 and higher (J)
S/N up to 10040 (UC)
S/N up to 10010 (J)
L:PCC CS OUT
L:IDM CS OUT
L:SP STB
L:V INS OUT
L:PCM ATF OUT
CORE SERIAL
L:POWER ON IN
L:POWER ON OUT
L:MODE CONTROL CS IN
L:CORE READY OUT
L:FEEDER IN
H:NTSC/L:PAL OUT
L:CASSETTE
M RF SWP
RF SW
L:AFM STEREO CONT IN
L:AFM STEREO OUT
L:ATF INH OUT
RP AFTER REC OUT
VIDEO MUTE OUT
PFS
L:TAPE END
L:TAPE TOP
L:REEL SERVO ON OUT
L:FWD/H:F
L:REEL BRAKE
L:-X1 OUT
L:-X3 OUT
ATF SW OUT
DCD OUT
REEL BIAS OUT
L:FULL ERASE
EMG OFF
TP001
+9V
DRIVE +5V
UNSW +5V
+5V (D)

A | B | C | D | E | F | G | H | I

SE-10 (1/3)


IC007
TC4066BF
BUS SW
IC003
CXP5048
AFT CONTROL
003
IC002
CXP5048
MECHANISM CONTROL
002
UNSW+5V
CORE SERIAL CLK IN
CORE SERIAL IN
CORE SERIAL OUT
35 SO OUT
L:35 SCK OUT
L:35 CS OUT
35 SI IN
HCHG OUT
TSA OUT
SEL 1 OUT
P SEL 1 OUT
SEL 1 OUT
SEL 2 OUT
P SEL 2 OUT
SEL 2 OUT
CHECK PIN
IC106-42 IN
A.SW OUT
LOADING OUT
UNLOADING OUT
TSB OUT
CASECON UP OUT
CASECON DOWN OUT
PFS LED
MODE SW A IN
MODE SW B IN
MODE SW C IN
LOADING SW A IN
LOADING SW B IN
LOADING SW C IN
L:HOLD OUT
L:START OUT
CONTROL R OUT
CONTROL L OUT
L:CONT M LEFT IN
Q004 DTC144EK
Q003 DTA144EK
CONTROL MOTOR SW
CAP L:FWD/H:RVS OUT
L:CAP ON OUT
L:PB PAUSE OUT
D0 OUT
D1 OUT
D2 OUT
D3 OUT
D4 OUT
L:CASSETTE IN IN
L:CASSETTE DOWN IN
M RF SWP OUT
M RF SWP OUT
RF SW PULSE IN
STILL SW OUT
L:ATF LOCK IN
PFS
L:TAPE END IN
L:TAPE TOP IN
REEL L:FWD/H:RVS OUT
L:REEL BRAKE OUT
RF PK IN
DCD IN
DCD OUT
REEL SWG OUT
FH CONT 2 OUT
L:HI CUE OUT
L:HI REV OUT
SLOW OUT
STILL ID IN
REEL DIR OUT
L:LP/H:SP (SINK) OUT
L:LP/H:SP (SINK) OUT
L:CUE OUT
L:REV OUT
L:FH MASK OUT
FH CONT 1 OUT
L:FULL ERASE ON OUT
GAIN CONT OUT
COMPA CONT OUT
RP PB MODE OUT
CAP FG IN
AUTO IN
JOG OUT
JOG VD OUT
DRUM ON OUT
L:DRUM ON OUT
Q007 DTC144EK
Q008 DTC144EK
Q010 DTA144EK
Q009 DTC144EK
Q011 DTA144EK
D/A CONVERTOR
Q006 DTC144EK SW
Q005 DTA144TK SW
S/N up to 10040 (UC)
S/N up to 10010 (J)
S/N 10041 and higher (UC)
S/N 10011 and higher (J)
Q005 DTC144EK
Q014 DTC144EK
Q015 DTC144EK
*1
*2
*3
*4

NOTE:

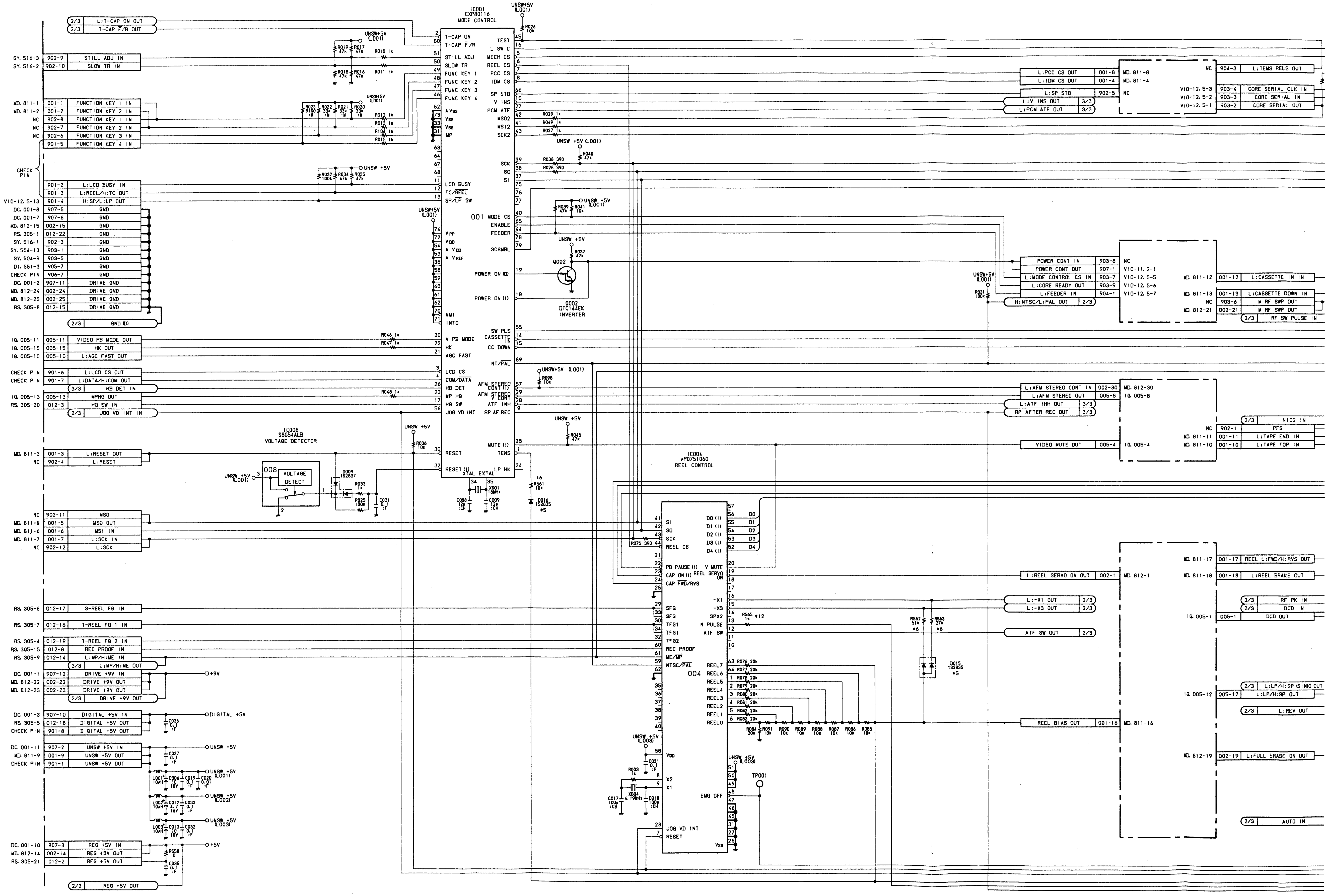
MARK	CHANGE INFORMATION	SERIAL NO.
*1	D013 1SS119 ADDED	UC:10041- J:10011-
*2	R074 CHANGED 10k → 1k	
*3	Refer to schematic Q005 CHANGED DTA144TK → DTC144EK Q014, 015 DTC144EK ADDED R556 10K ADDED	
*4	R068 CHANGED 22K → 2200 R557 220K ADDED	

SE-10(1/3)

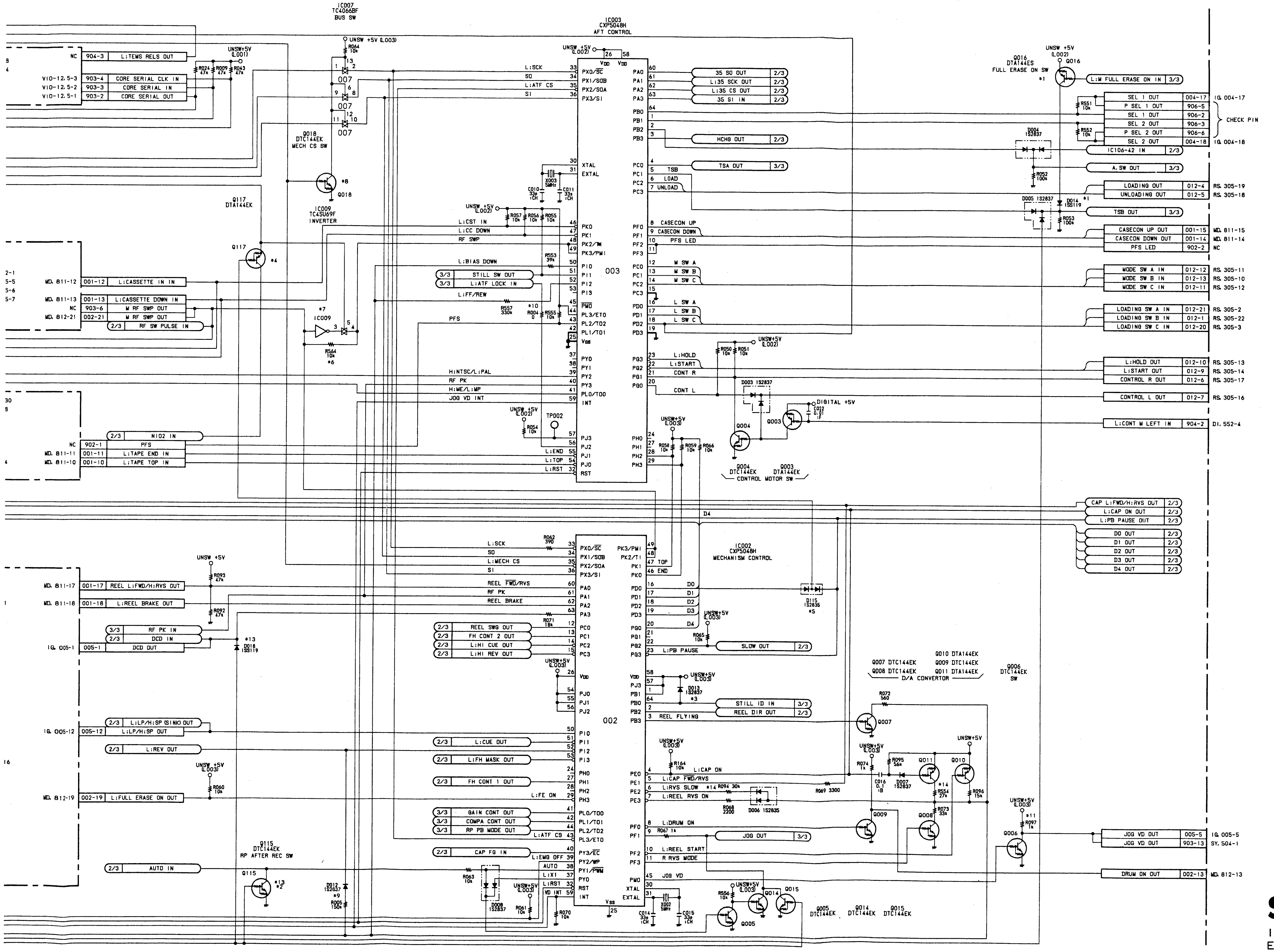
1-630-906-11, 12(1)
EVO-9800

SE-10 (1/3); MODE/MECHANISM/ATF/REEL CONTROL

S/N 10061 AND HIGHER (J)
S/N 10341 AND HIGHER (UC)


IC001
CXP80116
MODE CONTROL
IC004
μPD75106G
REEL CONTROL
IC008
S8054ALB
VOLTAGE DETECTOR
VOLTAGE DETECT
Q002
DTC144EK
INVERTER
X001 16MHz
X004 4.19MHz
D009 1SS237
D015 1SS235
D016 1SS235
TP001
L:T-CAP ON OUT
T-CAP F/R OUT
STILL ADJ IN
SLOW TR IN
FUNCTION KEY 1 IN
FUNCTION KEY 2 IN
FUNCTION KEY 3 IN
FUNCTION KEY 4 IN
CHECK PIN
L:LCD BUSY IN
L:REEL/H:TC OUT
H:SP/L:LP OUT
GND
DRIVE GND
GND (D)
VIDEO PB MODE OUT
HK OUT
L:AGC FAST OUT
L:LCD CS OUT
L:DATA/H:COM OUT
HB DET IN
MPHG OUT
HG SW IN
JOG VD INT IN
L:RESET OUT
L:RESET
MSO
MSO OUT
MSI IN
L:SCK IN
L:SCK
S-REEL FG IN
T-REEL FG 1 IN
T-REEL FG 2 IN
REC PROOF IN
L:MP/H:ME IN
L:MP/H:ME OUT
DRIVE +9V IN
DRIVE +9V OUT
DIGITAL +5V IN
DIGITAL +5V OUT
UNSW +5V IN
UNSW +5V OUT
REG +5V IN
REG +5V OUT
+9V
DIGITAL +5V
UNSW +5V
+5V
L:PCC CS OUT
L:IDM CS OUT
L:SP STB
L:V INS OUT
L:PCM ATF OUT
L:TEMS RELS OUT
CORE SERIAL CLK IN
CORE SERIAL IN
CORE SERIAL OUT
POWER CONT IN
POWER CONT OUT
L:MODE CONTROL CS IN
L:CORE READY OUT
L:FEEDER IN
H:NTSC/L:PAL OUT
L:CASSETTE IN IN
L:CASSETTE DOWN IN
M RF SWP OUT
RF SW PULSE IN
L:AFM STEREO CONT IN
L:AFM STEREO OUT
L:ATF INH OUT
RP AFTER REC OUT
NID2 IN
PFS
L:TAPE END IN
L:TAPE TOP IN
VIDEO MUTE OUT
L:REEL SERVO ON OUT
REEL L:FWD/H:RVS OUT
L:REEL BRAKE OUT
L:-X1 OUT
L:-X3 OUT
RF PK IN
DCD IN
DCD OUT
ATF SW OUT
L:LP/H:SP (SINO) OUT
L:LP/H:SP OUT
L:REV OUT
REEL BIAS OUT
L:FULL ERASE ON OUT
AUTO IN

A | B | C | D | E | F | G | H | I


IC007
TC4066BF
BUS SW
IC003
CXP5048H
AFT CONTROL
003
IC009
TC4SU69F
INVERTER
Q018
DTC144EK
MECH CS SW
Q117
DTA144EK
Q016
DTA144ES
FULL ERASE ON SW
904-3 L:TEMS RELS OUT
903-4 CORE SERIAL CLK IN
903-3 CORE SERIAL IN
903-2 CORE SERIAL OUT
VIO-12, 5-3
VIO-12, 5-2
VIO-12, 5-1
MD. 811-12 001-12 L:CASSETTE IN IN
MD. 811-13 001-13 L:CASSETTE DOWN IN
NC 903-6 M RF SWP OUT
MD. 812-21 002-21 L:RF SWP OUT
2/3 RF SW PULSE IN
2/3 NIO2 IN
NC 902-1 PFS
MD. 811-11 001-11 L:TAPE END IN
MD. 811-10 001-10 L:TAPE TOP IN
35 SO OUT 2/3
L:35 SCK OUT 2/3
L:35 CS OUT 2/3
35 SI IN 2/3
HCHG OUT 2/3
TSA OUT 3/3
3/3 STILL SW OUT
3/3 L:ATF LOCK IN
L:M FULL ERASE ON IN 3/3
SEL 1 OUT 004-17 IG. 004-17
P SEL 1 OUT 906-5
SEL 1 OUT 906-2
SEL 2 OUT 906-3
P SEL 2 OUT 906-6
SEL 2 OUT 004-18 IG. 004-18
CHECK PIN
IC106-42 IN 2/3
A. SW OUT 3/3
LOADING OUT 012-4 RS. 305-19
UNLOADING OUT 012-5 RS. 305-18
TSB OUT 3/3
CASECON UP OUT 001-15 MD. 811-15
CASECON DOWN OUT 001-14 MD. 811-14
PFS LED 902-2 NC
MODE SW A IN 012-12 RS. 305-11
MODE SW B IN 012-13 RS. 305-10
MODE SW C IN 012-11 RS. 305-12
LOADING SW A IN 012-21 RS. 305-2
LOADING SW B IN 012-1 RS. 305-22
LOADING SW C IN 012-20 RS. 305-3
L:HOLD OUT 012-10 RS. 305-13
L:START OUT 012-9 RS. 305-14
CONTROL R OUT 012-6 RS. 305-17
CONTROL L OUT 012-7 RS. 305-16
L:CONT M LEFT IN 904-2 DI. 552-4
Q004 DTC144EK
Q003 DTA144EK
CONTROL MOTOR SW
DIGITAL +5V
CAP L:FWD/H:RVS OUT 2/3
L:CAP ON OUT 2/3
L:PB PAUSE OUT 2/3
D0 OUT 2/3
D1 OUT 2/3
D2 OUT 2/3
D3 OUT 2/3
D4 OUT 2/3
IC002
CXP5048H
MECHANISM CONTROL
002
MD. 811-17 001-17 REEL L:FWD/H:RVS OUT
MD. 811-18 001-18 L:REEL BRAKE OUT
3/3 RF PK IN
2/3 DCD IN
IG. 005-1 005-1 DCD OUT
2/3 L:LP/H:SP (SINK) OUT
IG. 005-12 005-12 L:LP/H:SP OUT
2/3 L:REV OUT
MD. 812-19 002-19 L:FULL ERASE ON OUT
2/3 AUTO IN
Q115
DTC144EK
RP AFTER REC SW
2/3 REEL SWG OUT
2/3 FH CONT 2 OUT
2/3 L:HI CUE OUT
2/3 L:HI REV OUT
2/3 L:CUE OUT
2/3 L:FH MASK OUT
2/3 FH CONT 1 OUT
3/3 GAIN CONT OUT
3/3 COMPA CONT OUT
3/3 RP PB MODE OUT
2/3 CAP FG IN
SLOW OUT 2/3
STILL ID IN 3/3
REEL DIR OUT 2/3
JOG OUT 3/3
Q007 DTC144EK
Q008 DTC144EK
Q010 DTA144EK
Q009 DTC144EK
Q011 DTA144EK
D/A CONVERTOR
Q006
DTC144EK
SW
JOG VD OUT 005-5 IG. 005-5
JOG VD OUT 903-13 SY. 504-1
DRUM ON OUT 002-13 MD. 812-13
Q005 DTC144EK
Q014 DTC144EK
Q015 DTC144EK
UNSW+5V
D4

NOTE;

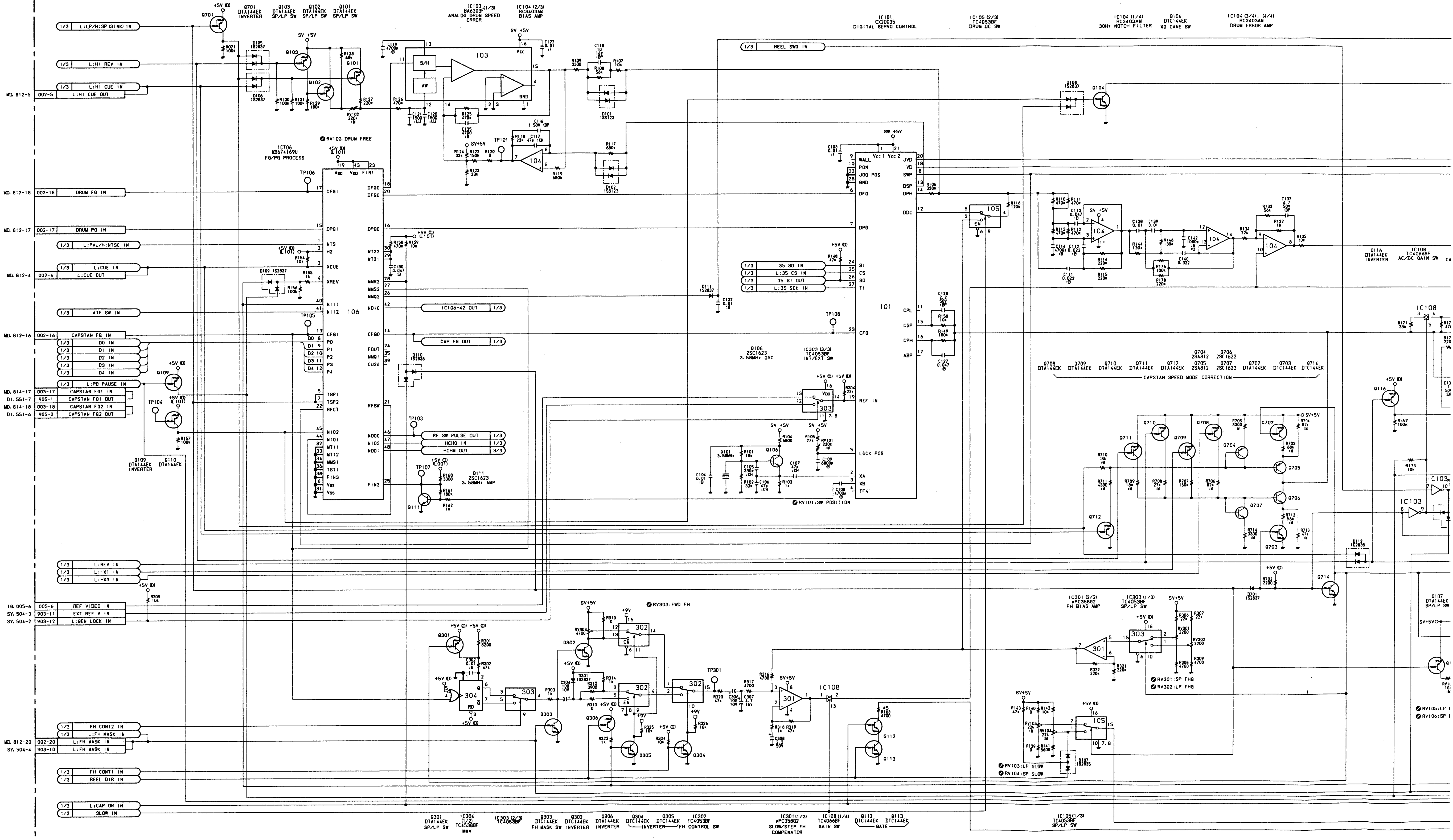
MARK	CHANGE INFORMATION	SERIAL NO
*1	D014, Q016 DELETED	J:10381- UC:11671-
*2	Q115 DELETED	
*3	D013 CHANGED 1SS119 → 1S2837	
*4	Q117 ADDED	
*5	D015, 016, 115 ADDED	
*6	R561, 562, 563, 564 ADDED	
*7	IC009 ADDED	
*8	Q018 ADDED	
*9	R005 CHANGED 100K → 150K	
*10	R004 DELETED	
*11	R097 CHANGED 10K 1K	
*12	R565 1K ADDED	J:10381- UC:11271-
*13	D018, Q115 ADDED	
*14	CHANGED R094 68K → 30K R554 12K → 27K	J:10481- UC:11871-

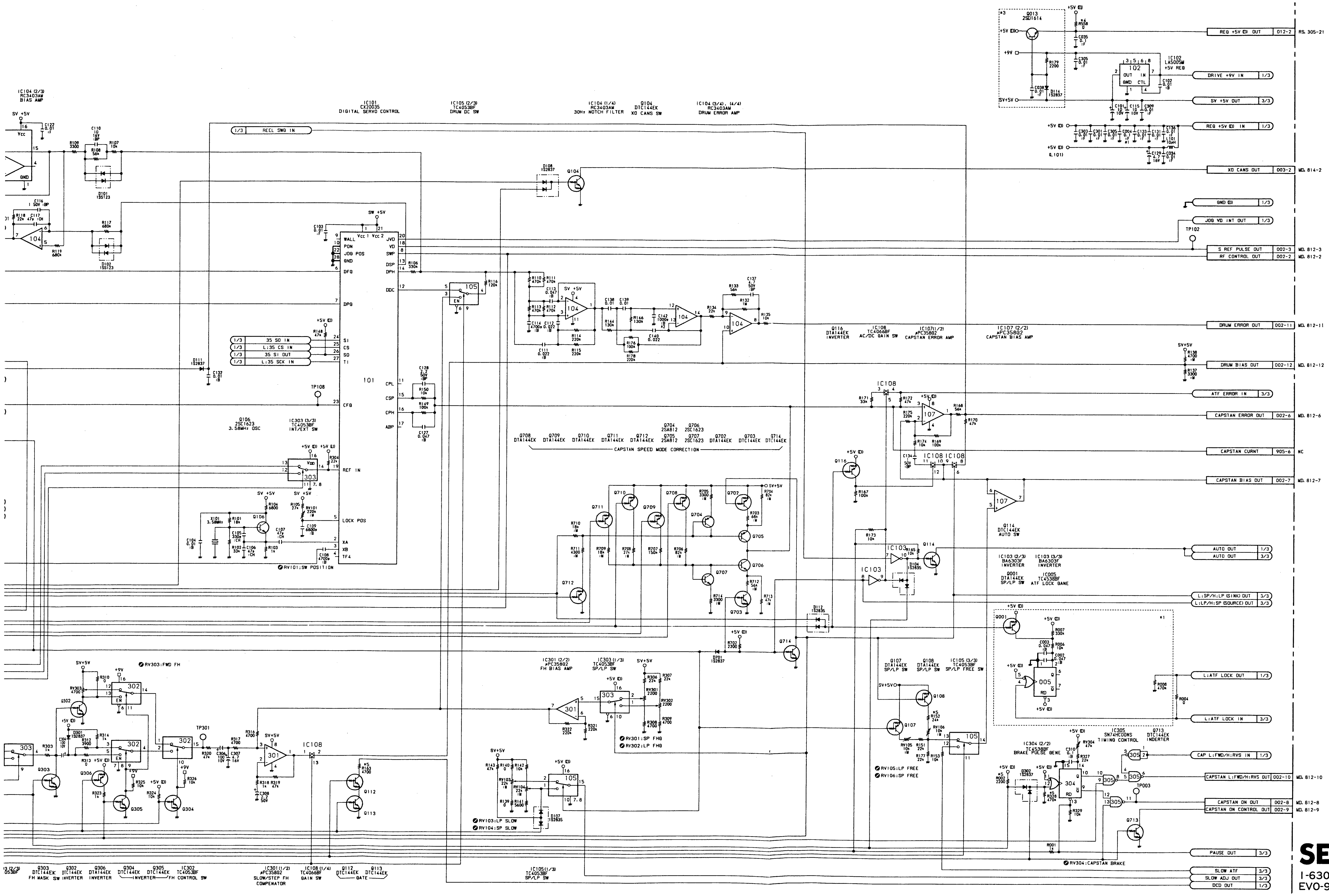
SE-10(1/3)

1-630-906-13, 14(1)
EVO-9800

SE-10 (2/3); DRUM/CAPSTAN SERVO

S/N UP TO 10060 (J)
S/N UP TO 10340 (UC)


IC101 CX20035 DIGITAL SERVO CONTROL
IC103 (1/3) BA6303F ANALOG DRUM SPEED ERROR
IC104 (2/3) RC3403AM BIAS AMP
IC105 (2/3) TC4053BF DRUM DC SW
IC104 (1/4) RC3403AM 30Hz NOTCH FILTER
Q104 DTC144EK XO CANS SW
IC104 (3/4), (4/4) RC3403AM DRUM ERROR AMP
IC106 MB674169U FG/PG PROCESS
Q701 DTA144EK INVERTER
Q103 DTA144EK SP/LP SW
Q102 DTA144EK SP/LP SW
Q101 DTA144EK SP/LP SW
Q106 2SC1623 3.58MHz OSC
IC303 (3/3) TC4053BF INT/EXT SW
Q111 2SC1623 3.58MHz AMP
Q109 DTA144EK INVERTER
Q110 DTA144EK
CAPSTAN SPEED MODE CORRECTION
IC301 (2/2) μPC35802 FH BIAS AMP
IC303 (1/3) TC4053BF SP/LP SW
IC105 (1/3) TC4053BF SP/LP SW
Q116 DTA144EK INVERTER
IC108 TC4066BF AC/DC GAIN SW
Q107 DTA144EK SP/LP SW
Q301 DTA144EK SP/LP SW
IC304 (1/2) TC4538BF MMV
IC303 (2/3) TC4053BF
Q303 DTC144EK FH MASK SW
Q302 DTC144EK INVERTER
Q306 DTA144EK INVERTER
Q304 DTC144EK
Q305 DTC144EK INVERTER
IC302 TC4053BF FH CONTROL SW
IC301 (1/2) μPC35802 SLOW/STEP FH COMPENSATOR
IC108 (1/4) TC4066BF GAIN SW
Q112 DTC144EK
Q113 DTC144EK GATE
RV102: DRUM FREE
RV101: SW POSITION
RV303: FWD FH
RV301: SP FHQ
RV302: LP FHQ
RV103: LP SLOW
RV104: SP SLOW
RV105: LP
RV106: SP
MD. 812-5 002-5 L:HI CUE OUT
1/3 L:LP/H:SP (SINK) IN
1/3 L:HI REV IN
1/3 L:HI CUE IN
MD. 812-18 002-18 DRUM FG IN
MD. 812-17 002-17 DRUM PG IN
1/3 L:PAL/H:NTSC IN
1/3 L:CUE IN
MD. 812-4 002-4 L:CUE OUT
1/3 ATF SW IN
MD. 812-16 002-16 CAPSTAN FG IN
1/3 D0 IN
1/3 D1 IN
1/3 D2 IN
1/3 D3 IN
1/3 D4 IN
1/3 L:PB PAUSE IN
MD. 814-17 003-17 CAPSTAN FG1 IN
DI. 551-7 905-1 CAPSTAN FG1 OUT
MD. 814-18 003-18 CAPSTAN FG2 IN
DI. 551-6 905-2 CAPSTAN FG2 OUT
1/3 L:REV IN
1/3 L:-X1 IN
1/3 L:-X3 IN
IO. 005-6 005-6 REF VIDEO IN
SY. 504-3 903-11 EXT REF V IN
SY. 504-2 903-12 L:GEN LOCK IN
1/3 FH CONT2 IN
1/3 L:FH MASK IN
MD. 812-20 002-20 L:FH MASK IN
SY. 504-4 903-10 L:FH MASK IN
1/3 FH CONT1 IN
1/3 REEL DIR IN
1/3 L:CAP ON IN
1/3 SLOW IN
1/3 REEL SWG IN
1/3 3S SO IN
1/3 L:3S CS IN
1/3 3S SI OUT
1/3 L:3S SCK IN
IC106-42 OUT 1/3
CAP FG OUT 1/3
RF SW PULSE OUT 1/3
HCHB IN 1/3
HCHM OUT 3/3
TP101
TP103
TP104
TP105
TP106
TP107
TP108
TP301
101
103
106
A
B
C
D
E
F
G
H


IC104 (2/3) RC3403AM BIAS AMP
IC101 CXD1035 DIGITAL SERVO CONTROL
IC105 (2/3) TC4053BF DRUM DC SW
IC104 (1/4) RC3403AM 30Hz NOTCH FILTER
Q104 DTC144EK XO CANS SW
IC104 (3/4), (4/4) RC3403AM DRUM ERROR AMP
Q013 2SD1614
IC102 LA5005M +5V REG
REEL SWG IN
REG +5V OUT
DRIVE +9V IN
SV +5V OUT
REG +5V IN
XO CANS OUT
GND
JOG VD INT OUT
TP102
S REF PULSE OUT
RF CONTROL OUT
DRUM ERROR OUT
DRUM BIAS OUT
ATF ERROR IN
CAPSTAN ERROR OUT
CAPSTAN CURNT
CAPSTAN BIAS OUT
AUTO OUT
L:SP/H:LP (SINK) OUT
L:LP/H:SP (SOURCE) OUT
L:ATF LOCK OUT
L:ATF LOCK IN
CAP L:FWD/H:RVS IN
CAPSTAN L:FWD/H:RVS OUT
CAPSTAN ON OUT
CAPSTAN ON CONTROL OUT
PAUSE OUT
SLOW ATF
SLOW ADJ OUT
DCD OUT
RS. 305-21
MD. 814-2
MD. 812-3
MD. 812-2
MD. 812-11
MD. 812-12
MD. 812-6
NC
MD. 812-7
MD. 812-10
MD. 812-8
MD. 812-9
35 SO IN
L:35 CS IN
35 SI OUT
L:35 SCK IN
Q116 DTA144EK INVERTER
IC108 TC4066BF AC/DC GAIN SW
IC107 (1/2) μPC358G2 CAPSTAN ERROR AMP
IC107 (2/2) μPC358G2 CAPSTAN BIAS AMP
Q106 2SC1623 3.58MHz OSC
IC303 (3/3) TC4053BF INT/EXT SW
CAPSTAN SPEED MODE CORRECTION
Q114 DTC144EK AUTO SW
IC103 (2/3) BA6303F INVERTER
IC103 (3/3) BA6303F INVERTER
Q001 DTA144EK SP/LP SW
IC005 TC4538BF ATF LOCK GANE
RV101:SW POSITION
RV303:FWD FH
IC301 (2/2) μPC358G2 FH BIAS AMP
IC303 (1/3) TC4053BF SP/LP SW
RV301:SP FHG
RV302:LP FHG
Q107 DTA144EK SP/LP SW
Q108 DTA144EK SP/LP SW
IC105 (3/3) TC4053BF SP/LP FREE SW
RV105:LP FREE
RV106:SP FREE
IC304 (2/2) TC4538BF BRAKE PULSE GENE
IC305 SN74HC00NS TIMING CONTROL
Q713 DTC144EK INVERTER
RV304:CAPSTAN BRAKE
RV103:LP SLOW
RV104:SP SLOW
Q303 DTC144EK FH MASK SW
Q302 DTC144EK INVERTER
Q306 DTA144EK INVERTER
Q304 DTC144EK INVERTER
Q305 DTC144EK INVERTER
IC302 TC4053BF FH CONTROL SW
IC301 (1/2) μPC358G2 SLOW/STEP FH COMPENATOR
IC108 (1/4) TC4066BF GAIN SW
Q112 DTC144EK GATE
Q113 DTC144EK GATE
IC105 (1/3) TC4053BF SP/LP SW

NOTE:

MARK	CHANGE INFORMATION	SERIAL NO.
*1	C002-004, Q001, IC005, R006-008 DELETED	UC:10041- J:10011-
*2	C142 CHANGED 2200P → 1000P	
*3	C038, D114, Q013 R179 DELETED	
*4	R558 ADDED	
*5	CHANGED R002 10K ← 2200 R152 22K ← 24K R163 5600 ← 4700 R328 100K ← 470K	

SE-10(2/3)

1-630-906-11, 12(1)
EVO-9800

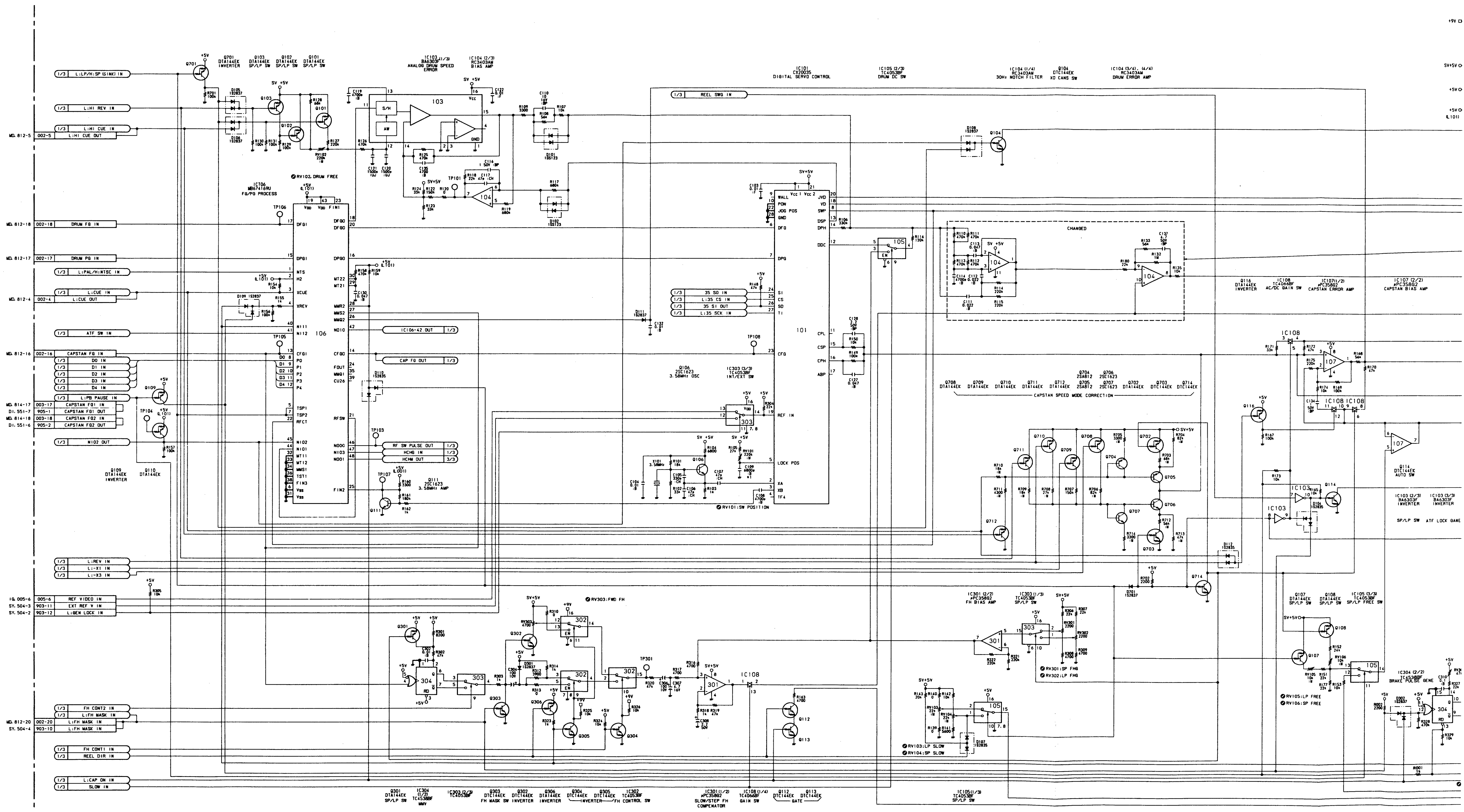
13-53(a)

13-54(a)

E F G H I J K L

SE-10 (2/3); DRUM/CAPSTAN SERVO

S/N 10061 AND HIGHER (J)
S/N 10341 AND HIGHER (UC)


L:LP/H:SP(SINC) IN
L:HI REV IN
L:HI CUE IN
L:HI CUE OUT
DRUM FG IN
DRUM PG IN
L:PAL/H:NTSC IN
L:CUE IN
L:CUE OUT
ATF SW IN
CAPSTAN FG IN
D0 IN
D1 IN
D2 IN
D3 IN
D4 IN
L:PB PAUSE IN
CAPSTAN FG1 IN
CAPSTAN FG1 OUT
CAPSTAN FG2 IN
CAPSTAN FG2 OUT
NI02 OUT
L:REV IN
L:-X1 IN
L:-X3 IN
REF VIDEO IN
EXT REF V IN
L:GEN LOCK IN
FH CONT2 IN
L:FH MASK IN
L:FH MASK IN
FH CONT1 IN
REEL DIR IN
L:CAP ON IN
SLOW IN
REEL SWG IN
35 SO IN
L:35 CS IN
35 SI OUT
L:35 SCK IN
IC106-42 OUT
CAP FG OUT
RF SW PULSE OUT
HCHG IN
HCHM OUT
IC106 MB674169U FG/PG PROCESS
IC103 (1/3) BA6303F ANALOG DRUM SPEED ERROR
IC104 (2/3) RC3403AM BIAS AMP
IC101 CX20035 DIGITAL SERVO CONTROL
IC105 (2/3) TC4053BF DRUM DC SW
IC104 (1/4) RC3403AM 30Hz NOTCH FILTER
Q104 DTC144EK XO CANS SW
IC104 (3/4), (4/4) RC3403AM DRUM ERROR AMP
Q701 DTA144EK INVERTER
Q103 DTA144EK SP/LP SW
Q102 DTA144EK SP/LP SW
Q101 DTA144EK SP/LP SW
RV102 DRUM FREE
CHANGED
Q116 DTA144EK INVERTER
IC108 TC4066BF AC/DC GAIN SW
IC107(1/2) μPC358G2 CAPSTAN ERROR AMP
IC107 (2/2) μPC358G2 CAPSTAN BIAS AMP
CAPSTAN SPEED MODE CORRECTION
Q106 2SC1623 3.58MHz OSC
IC303 (3/3) TC4053BF INT/EXT SW
RV101 SW POSITION
Q111 2SC1623 3.58MHz AMP
Q109 DTA144EK INVERTER
Q110 DTA144EK
Q114 DTC144EK AUTO SW
IC103 (2/3) BA6303F INVERTER
IC103 (3/3) BA6303F INVERTER
SP/LP SW
ATF LOCK GAME
RV303 FWD FH
IC301 (2/2) μPC358G2 FH BIAS AMP
IC303 (1/3) TC4053BF SP/LP SW
RV301 SP FHG
RV302 LP FHG
Q107 DTA144EK SP/LP SW
Q108 DTA144EK SP/LP SW
IC105 (3/3) TC4053BF SP/LP FREE SW
RV105 LP FREE
RV106 SP FREE
IC304 (2/2) TC4538BF BRAKE PULSE GENE
RV103 LP SLOW
RV104 SP SLOW
IC105(1/3) TC4053BF SP/LP SW
Q301 DTA144EK SP/LP SW
IC304 (1/2) TC4538BF MMV
IC303 (2/3) TC4053BF
Q303 DTC144EK FH MASK SW
Q302 DTC144EK INVERTER
Q306 DTA144EK INVERTER
Q304 DTC144EK
Q305 DTC144EK INVERTER
IC302 TC4053BF FH CONTROL SW
IC301(1/2) μPC358G2 SLOW/STEP FH COMPENATOR
IC108 (1/4) TC4066BF GAIN SW
Q112 DTC144EK
Q113 DTC144EK GATE
MD. 812-5
MD. 812-18
MD. 812-17
MD. 812-4
MD. 812-16
MD. 814-17
DI. 551-7
MD. 814-18
DI. 551-6
IG. 005-6
SY. 504-3
SY. 504-2
MD. 812-20
SY. 504-4

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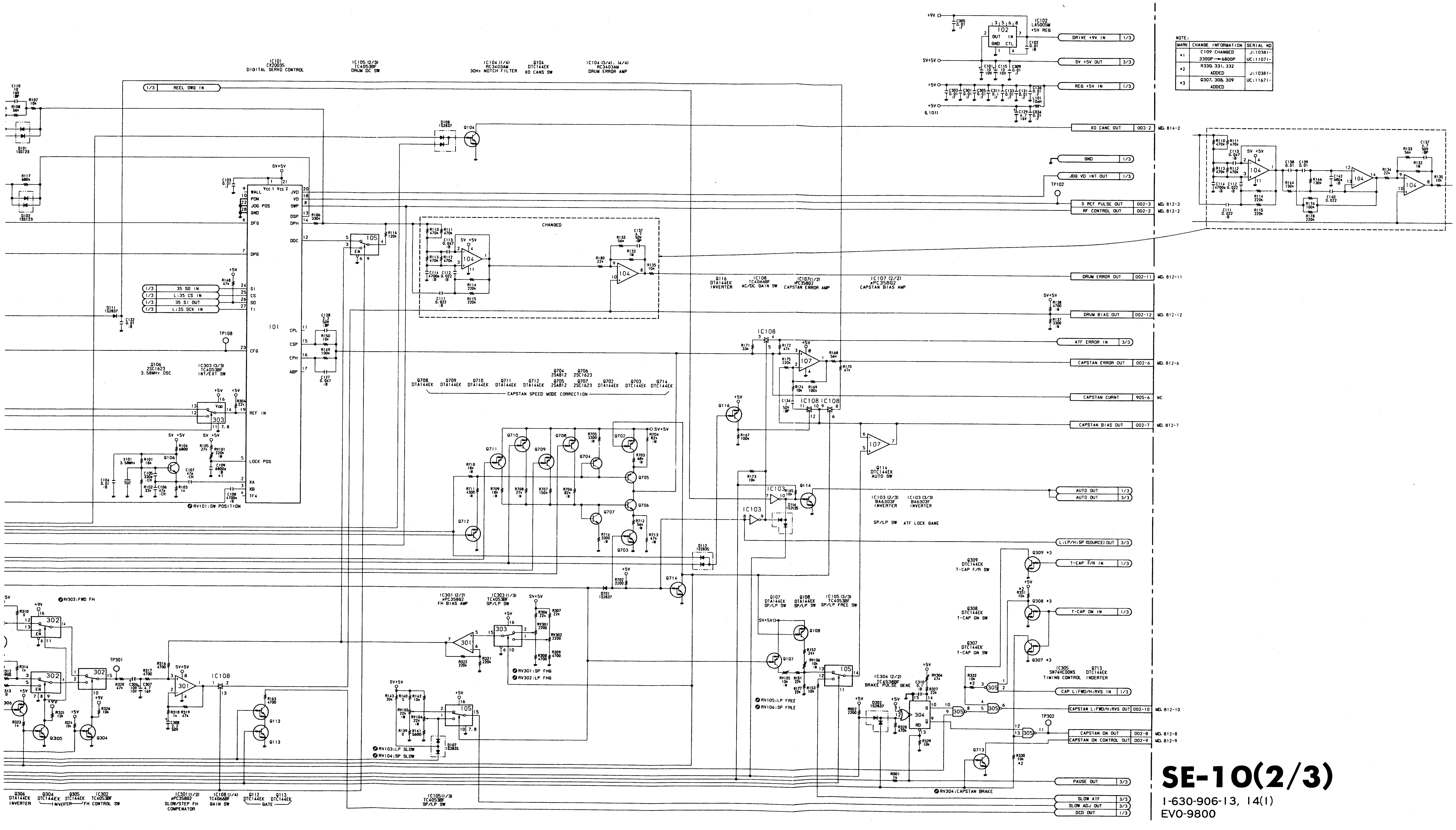

IC101 CX20035 DIGITAL SERVO CONTROL
IC105 (2/3) TC4053BF DRUM DC SW
IC104 (1/4) RC3403AM 30Hz NOTCH FILTER
Q104 DTC144EK XO CANS SW
IC104 (3/4), (4/4) RC3403AM DRUM ERROR AMP
IC102 LA5005M +5V REG
DRIVE +9V IN
5V +5V OUT
REG +5V IN
XO CANC OUT
GND
JOG VD INT OUT
S REF PULSE OUT
RF CONTROL OUT
DRUM ERROR OUT
DRUM BIAS OUT
ATF ERROR IN
CAPSTAN ERROR OUT
CAPSTAN CURNT
CAPSTAN BIAS OUT
AUTO OUT
L:LP/H:SP (SOURCE) OUT
T-CAP F/R IN
T-CAP ON IN
CAP L:FWD/H:RVS IN
CAPSTAN L:FWD/H:RVS OUT
CAPSTAN ON OUT
CAPSTAN ON CONTROL OUT
PAUSE OUT
SLOW ATF
SLOW ADJ OUT
DCD OUT
REEL SWG IN
3S SO IN
L:3S CS IN
3S SI OUT
L:3S SCK IN
CHANGED
Q116 DTA144EK INVERTER
IC108 TC4066BF AC/DC GAIN SW
IC107 (1/2) μPC358G2 CAPSTAN ERROR AMP
IC107 (2/2) μPC358G2 CAPSTAN BIAS AMP
Q106 2SC1623 3.58MHz OSC
IC303 (3/3) TC4053BF INT/EXT SW
CAPSTAN SPEED MODE CORRECTION
Q114 DTC144EK AUTO SW
IC103 (2/3) BA6303F INVERTER
IC103 (3/3) BA6303F INVERTER
SP/LP SW
ATF LOCK GAME
Q309 DTC144EK T-CAP F/R SW
Q308 DTC144EK T-CAP ON SW
Q307 DTC144EK T-CAP ON SW
IC305 SN74HC00NS TIMING CONTROL
Q713 DTC144EK INDERTER
IC301 (2/2) μPC358G2 FH BIAS AMP
IC303 (1/3) TC4053BF SP/LP SW
Q107 DTA144EK SP/LP SW
Q108 DTA144EK SP/LP SW
IC105 (3/3) TC4053BF SP/LP FREE SW
IC304 (2/2) TC4538BF BRAKE PULSE GENE
RV101:SW POSITION
RV303:FWD FH
RV301:SP FHG
RV302:SP FHG
RV103:LP SLOW
RV104:SP SLOW
RV105:LP FREE
RV106:SP FREE
RV304:CAPSTAN BRAKE
Q306 DTA144EK INVERTER
Q304 DTC144EK
Q305 DTC144EK INVERTER
IC302 TC4053BF FH CONTROL SW
IC301 (1/2) μPC358G2 SLOW/STEP FH COMPENATOR
IC108 (1/4) TC4066BF GAIN SW
Q112 DTC144EK
Q113 DTC144EK GATE
IC105 (1/3) TC4053BF SP/LP SW
TP108
TP102
TP301
TP302
MD. 814-2
MD. 812-3
MD. 812-2
MD. 812-11
MD. 812-12
MD. 812-6
MD. 812-7
MD. 812-10
MD. 812-8
MD. 812-9

NOTE:

MARK	CHANGE INFORMATION	SERIAL NO
*1	C109 CHANGED 3300P → 6800P	J:10381- UC:11071-
*2	R330, 331, 332 ADDED	J:10381- UC:11671-
*3	Q307, 308, 309 ADDED	

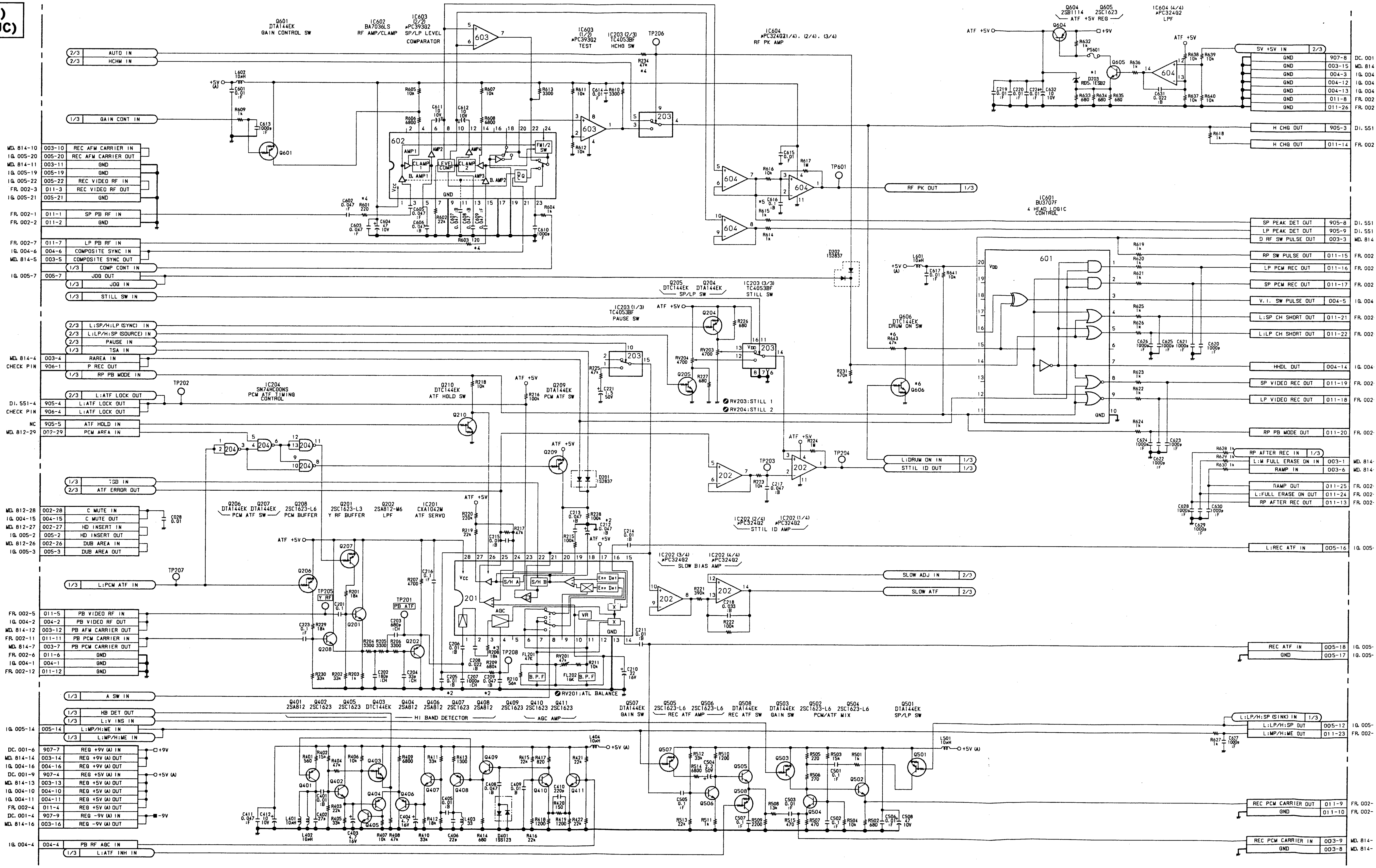
SE-10(2/3)

1-630-906-13, 14(1)
EVO-9800

E F G H I J K L

SE-10 (3/3); ATF SERVO
IG-4; TERMINAL

S/N UP TO 10060 (J)
S/N UP TO 10340 (UC)


Q601 DTA144EK GAIN CONTROL SW
IC602 BA7036LS RF AMP/CLAMP
IC603 (2/2) µPC393G2 SP/LP LEVEL COMPARATOR
IC603 (1/2) µPC393G2 TEST
IC203 (2/3) TC4053BF HCHG SW
IC604 µPC324G2(1/4), (2/4), (3/4) RF PK AMP
Q604 2SB1114
Q605 2SC1623
ATF +5V REG
IC604 (4/4) µPC324G2 LPF
IC601 BU3707F 4 HEAD LOGIC CONTROL
AUTO IN
HCHG IN
GAIN CONT IN
REC AFM CARRIER IN
REC AFM CARRIER OUT
GND
REC VIDEO RF IN
REC VIDEO RF OUT
SP PB RF IN
LP PB RF IN
COMPOSITE SYNC IN
COMPOSITE SYNC OUT
COMP CONT IN
JOG OUT
JOG IN
STILL SW IN
L:SP/H:LP (SYNC) IN
L:LP/H:SP (SOURCE) IN
PAUSE IN
TSA IN
RAREA IN
P REC OUT
RP PB MODE IN
L:ATF LOCK OUT
ATF HOLD IN
PCM AREA IN
TSD IN
ATF ERROR OUT
C MUTE IN
C MUTE OUT
HD INSERT IN
HD INSERT OUT
DUB AREA IN
DUB AREA OUT
L:PCM ATF IN
PB VIDEO RF IN
PB VIDEO RF OUT
PB AFM CARRIER OUT
PB PCM CARRIER IN
PB PCM CARRIER OUT
A SW IN
HB DET OUT
L:V INS IN
L:MP/H:ME IN
REG +9V (A) IN
REG +9V (A) OUT
REG +5V (A) IN
REG +5V (A) OUT
REG -9V (A) IN
REG -9V (A) OUT
PB RF AGC IN
L:ATF INH IN
SV +5V IN
H CHG OUT
RF PK OUT
SP PEAK DET OUT
LP PEAK DET OUT
D RF SW PULSE OUT
RP SW PULSE OUT
LP PCM REC OUT
SP PCM REC OUT
V.I. SW PULSE OUT
L:SP CH SHORT OUT
L:LP CH SHORT OUT
HHDL OUT
SP VIDEO REC OUT
LP VIDEO REC OUT
RP PB MODE OUT
RP AFTER REC IN
L:M FULL ERASE ON IN
RAMP IN
RAMP OUT
L:FULL ERASE ON OUT
RP AFTER REC OUT
L:DRUM ON IN
STTIL ID OUT
L:REC ATF IN
SLOW ADJ IN
SLOW ATF
REC ATF IN
L:LP/H:SP (SINK) IN
L:LP/H:SP OUT
L:MP/H:ME OUT
REC PCM CARRIER OUT
REC PCM CARRIER IN
IC204 SN74HC00NS PCM ATF TIMING CONTROL
Q210 DTC144EK ATF HOLD SW
Q209 DTA144EK PCM ATF SW
IC203 (1/3) TC4053BF PAUSE SW
Q205 DTC144EK Q204 DTA144EK SP/LP SW
IC203 (3/3) TC4053BF STILL SW
Q606 DTC144EK DRUM ON SW
RV203:STILL 1
RV204:STILL 2
Q206 DTA144EK Q207 DTA144EK PCM ATF SW
Q208 2SC1623-L6 PCM BUFFER
Q201 2SC1623-L3 Y RF BUFFER
Q202 2SA812-M6 LPF
IC201 CXA1042M ATF SERVO
IC202 (2/4) µPC324G2 IC202 (1/4) µPC324G2 STTIL ID AMP
IC202 (3/4) µPC324G2 IC202 (4/4) µPC324G2 SLOW BIAS AMP
RV201:ATL BALANCE
HI BAND DETECTOR
AGC AMP
Q507 DTA144EK GAIN SW
Q505 2SC1623-L6 Q506 2SC1623-L6 REC ATF AMP
Q508 DTA144EK REC ATF SW
Q503 DTA144EK GAIN SW
Q502 2SC1623-L6 Q504 2SC1623-L6 PCM/ATF MIX
Q501 DTA144EK SP/LP SW

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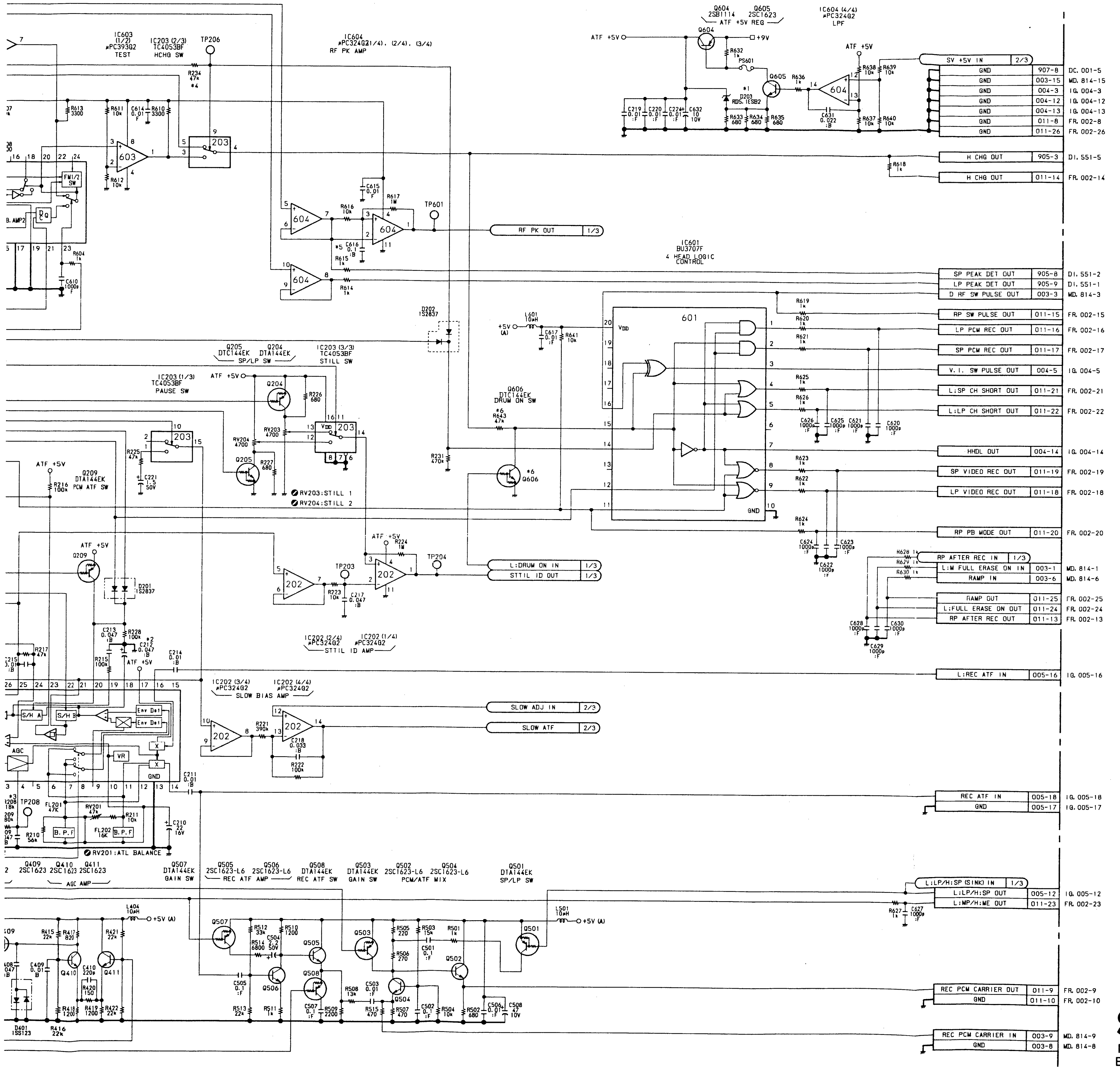
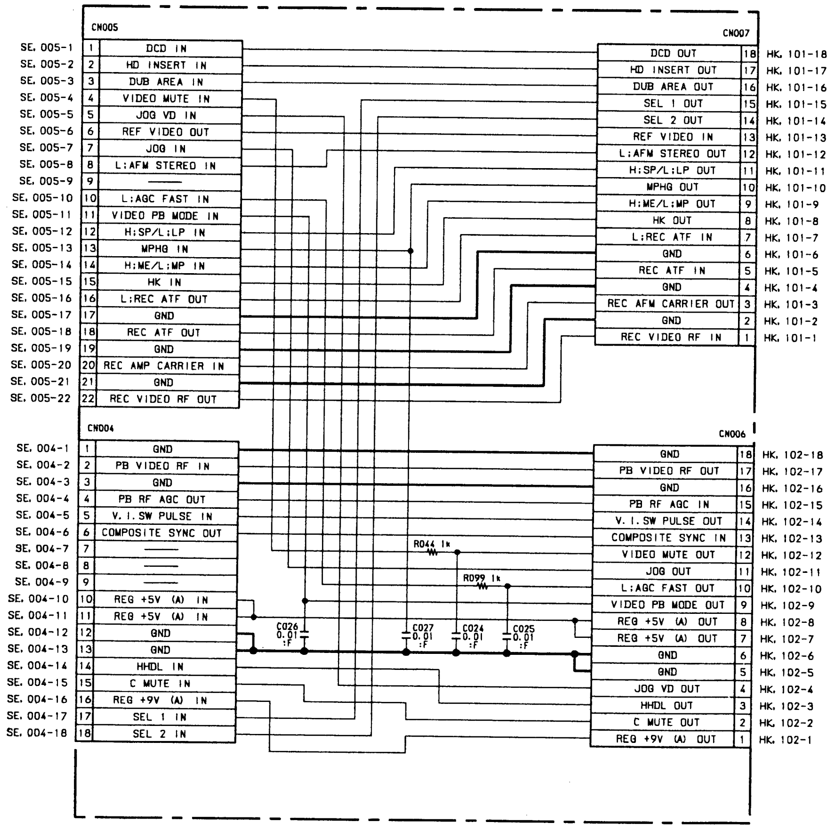

IC603 (1/2) μPC393G2 TEST
IC203 (2/3) TC4053BF HCHG SW
TP206
IC604 μPC324G2(1/4), (2/4), (3/4) RF PK AMP
Q604 2SB1114
Q605 2SC1623
ATF +5V REG
IC604 (4/4) μPC324G2 LPF
ATF +5V
SV +5V IN 2/3
GND 907-8 DC. 001-5
GND 003-15 MD. 814-15
GND 004-3 IG. 004-3
GND 004-12 IG. 004-12
GND 004-13 IG. 004-13
GND 011-8 FR. 002-8
GND 011-26 FR. 002-26
H CHG OUT 905-3 DI. 551-5
H CHG OUT 011-14 FR. 002-14
RF PK OUT 1/3
TP601
IC601 BU3707F 4 HEAD LOGIC CONTROL
SP PEAK DET OUT 905-8 DI. 551-2
LP PEAK DET OUT 905-9 DI. 551-1
D RF SW PULSE OUT 003-3 MD. 814-3
RP SW PULSE OUT 011-15 FR. 002-15
LP PCM REC OUT 011-16 FR. 002-16
SP PCM REC OUT 011-17 FR. 002-17
V. I. SW PULSE OUT 004-5 IG. 004-5
L;SP CH SHORT OUT 011-21 FR. 002-21
L;LP CH SHORT OUT 011-22 FR. 002-22
HHDL OUT 004-14 IG. 004-14
SP VIDEO REC OUT 011-19 FR. 002-19
LP VIDEO REC OUT 011-18 FR. 002-18
RP PB MODE OUT 011-20 FR. 002-20
RP AFTER REC IN 1/3
L:M FULL ERASE ON IN 003-1 MD. 814-1
RAMP IN 003-6 MD. 814-6
RAMP OUT 011-25 FR. 002-25
L;FULL ERASE ON OUT 011-24 FR. 002-24
RP AFTER REC OUT 011-13 FR. 002-13
L;REC ATF IN 005-16 IG. 005-16
D202 1S2837
Q205 DTC144EK
Q204 DTA144EK
SP/LP SW
IC203 (3/3) TC4053BF STILL SW
IC203 (1/3) TC4053BF PAUSE SW
Q606 DTC144EK DRUM ON SW
RV203:STILL 1
RV204:STILL 2
Q209 DTA144EK PCM ATF SW
D201 1S2837
L;DRUM ON IN 1/3
STTIL ID OUT 1/3
TP203
TP204
IC202 (2/4) μPC324G2
IC202 (1/4) μPC324G2
STTIL ID AMP
IC202 (3/4) μPC324G2
IC202 (4/4) μPC324G2
SLOW BIAS AMP
SLOW ADJ IN 2/3
SLOW ATF 2/3
AGC
VR
TP208
RV201:ATL BALANCE
REC ATF IN 005-18 IG. 005-18
GND 005-17 IG. 005-17
Q409 2SC1623
Q410 2SC1623
Q411 2SC1623
AGC AMP
Q507 DTA144EK GAIN SW
Q505 2SC1623-L6
Q506 2SC1623-L6
REC ATF AMP
Q508 DTA144EK REC ATF SW
Q503 DTA144EK GAIN SW
Q502 2SC1623-L6
Q504 2SC1623-L6
PCM/ATF MIX
Q501 DTA144EK SP/LP SW
L:LP/H:SP (SINK) IN 1/3
L;LP/H;SP OUT 005-12 IG. 005-12
L;MP/H;ME OUT 011-23 FR. 002-23
REC PCM CARRIER OUT 011-9 FR. 002-9
GND 011-10 FR. 002-10
REC PCM CARRIER IN 003-9 MD. 814-9
GND 003-8 MD. 814-8
D401 1SS123

NOTE:

MARK	CHANGE INFORMATION	SERIAL NO.
*1	D203 RD5.1ESB2 ADDED	UC: 10041- J: 10011-
*2	CHANGED C205 0.047 → 0.01 C209 0.022 → 0.047 C212 4700P → 0.047	
*3	R208 CHANGED 33K → 18K	
*4	R601, 603 DELETED R234 47K ADDED	
*5	C616 CHANGED 0.1;F → 0.1;B	
*6	Q606, R643 DELETED	


CN005
SE. 005-1 1 DCD IN
SE. 005-2 2 HD INSERT IN
SE. 005-3 3 DUB AREA IN
SE. 005-4 4 VIDEO MUTE IN
SE. 005-5 5 JOG VD IN
SE. 005-6 6 REF VIDEO OUT
SE. 005-7 7 JOG IN
SE. 005-8 8 L;AFM STEREO IN
SE. 005-9 9
SE. 005-10 10 L;AGC FAST IN
SE. 005-11 11 VIDEO PB MODE IN
SE. 005-12 12 H;SP/L;LP IN
SE. 005-13 13 MPHG IN
SE. 005-14 14 H;ME/L;MP IN
SE. 005-15 15 HK IN
SE. 005-16 16 L;REC ATF OUT
SE. 005-17 17 GND
SE. 005-18 18 REC ATF OUT
SE. 005-19 19 GND
SE. 005-20 20 REC AMP CARRIER IN
SE. 005-21 21 GND
SE. 005-22 22 REC VIDEO RF OUT
CN004
SE. 004-1 1 GND
SE. 004-2 2 PB VIDEO RF IN
SE. 004-3 3 GND
SE. 004-4 4 PB RF AGC OUT
SE. 004-5 5 V. I. SW PULSE IN
SE. 004-6 6 COMPOSITE SYNC OUT
SE. 004-7 7
SE. 004-8 8
SE. 004-9 9
SE. 004-10 10 REG +5V (A) IN
SE. 004-11 11 REG +5V (A) IN
SE. 004-12 12 GND
SE. 004-13 13 GND
SE. 004-14 14 HHDL IN
SE. 004-15 15 C MUTE IN
SE. 004-16 16 REG +9V (A) IN
SE. 004-17 17 SEL 1 IN
SE. 004-18 18 SEL 2 IN
CN007
DCD OUT 18 HK. 101-18
HD INSERT OUT 17 HK. 101-17
DUB AREA OUT 16 HK. 101-16
SEL 1 OUT 15 HK. 101-15
SEL 2 OUT 14 HK. 101-14
REF VIDEO IN 13 HK. 101-13
L;AFM STEREO OUT 12 HK. 101-12
H;SP/L;LP OUT 11 HK. 101-11
MPHG OUT 10 HK. 101-10
H;ME/L;MP OUT 9 HK. 101-9
HK OUT 8 HK. 101-8
L;REC ATF IN 7 HK. 101-7
GND 6 HK. 101-6
REC ATF IN 5 HK. 101-5
GND 4 HK. 101-4
REC AFM CARRIER OUT 3 HK. 101-3
GND 2 HK. 101-2
REC VIDEO RF IN 1 HK. 101-1
CN006
GND 18 HK. 102-18
PB VIDEO RF OUT 17 HK. 102-17
GND 16 HK. 102-16
PB RF AGC IN 15 HK. 102-15
V. I. SW PULSE OUT 14 HK. 102-14
COMPOSITE SYNC IN 13 HK. 102-13
VIDEO MUTE OUT 12 HK. 102-12
JOG OUT 11 HK. 102-11
L;AGC FAST OUT 10 HK. 102-10
VIDEO PB MODE OUT 9 HK. 102-9
REG +5V (A) OUT 8 HK. 102-8
REG +5V (A) OUT 7 HK. 102-7
GND 6 HK. 102-6
GND 5 HK. 102-5
JOG VD OUT 4 HK. 102-4
HHDL OUT 3 HK. 102-3
C MUTE OUT 2 HK. 102-2
REG +9V (A) OUT 1 HK. 102-1
R044 1k
R099 1k
C026 0.01 :F
C027 0.01 :F
C024 0.01 :F
C025 0.01 :F

IG-4

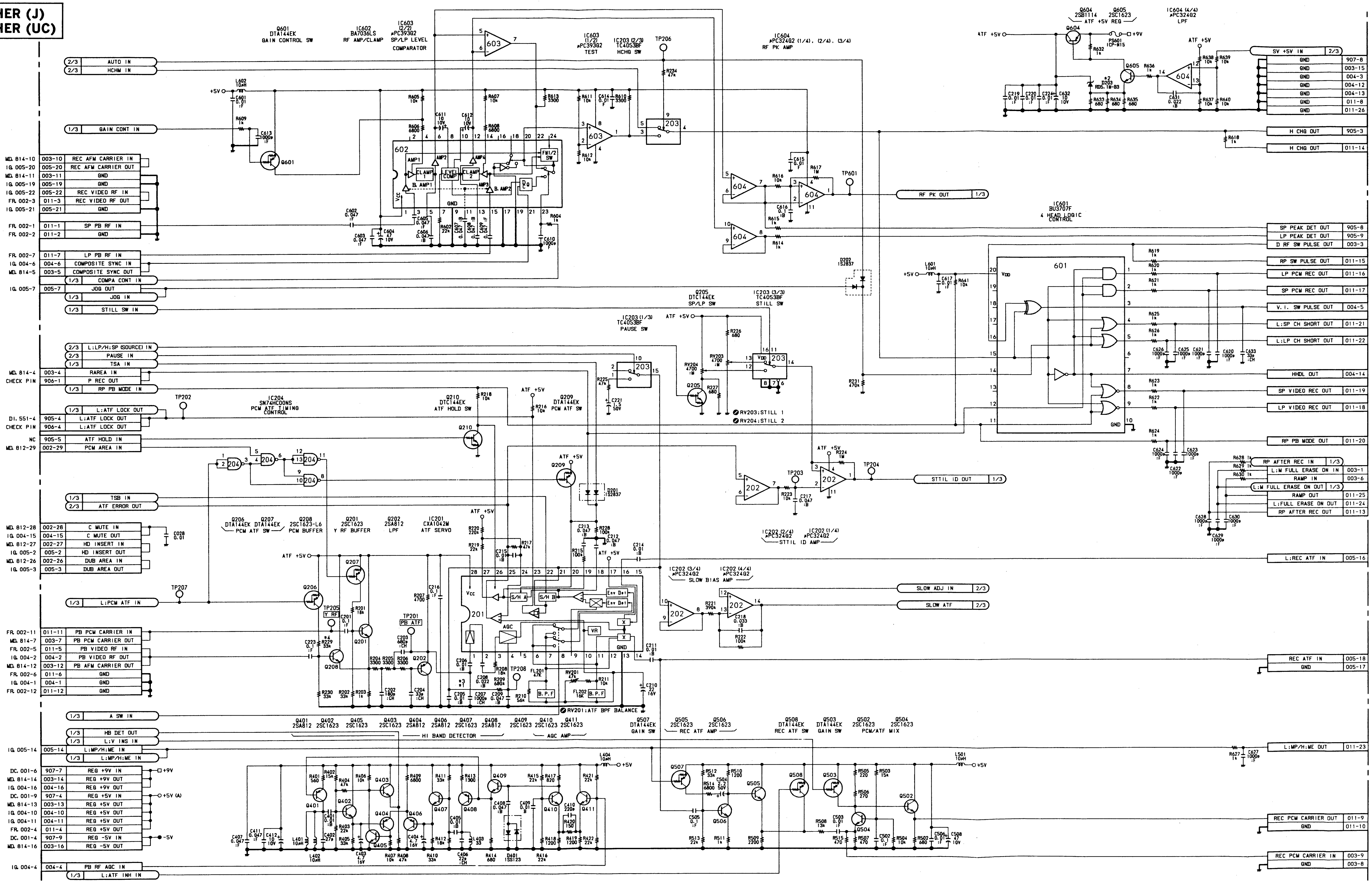
1-630-904-11, 12(1)
EVO-9800

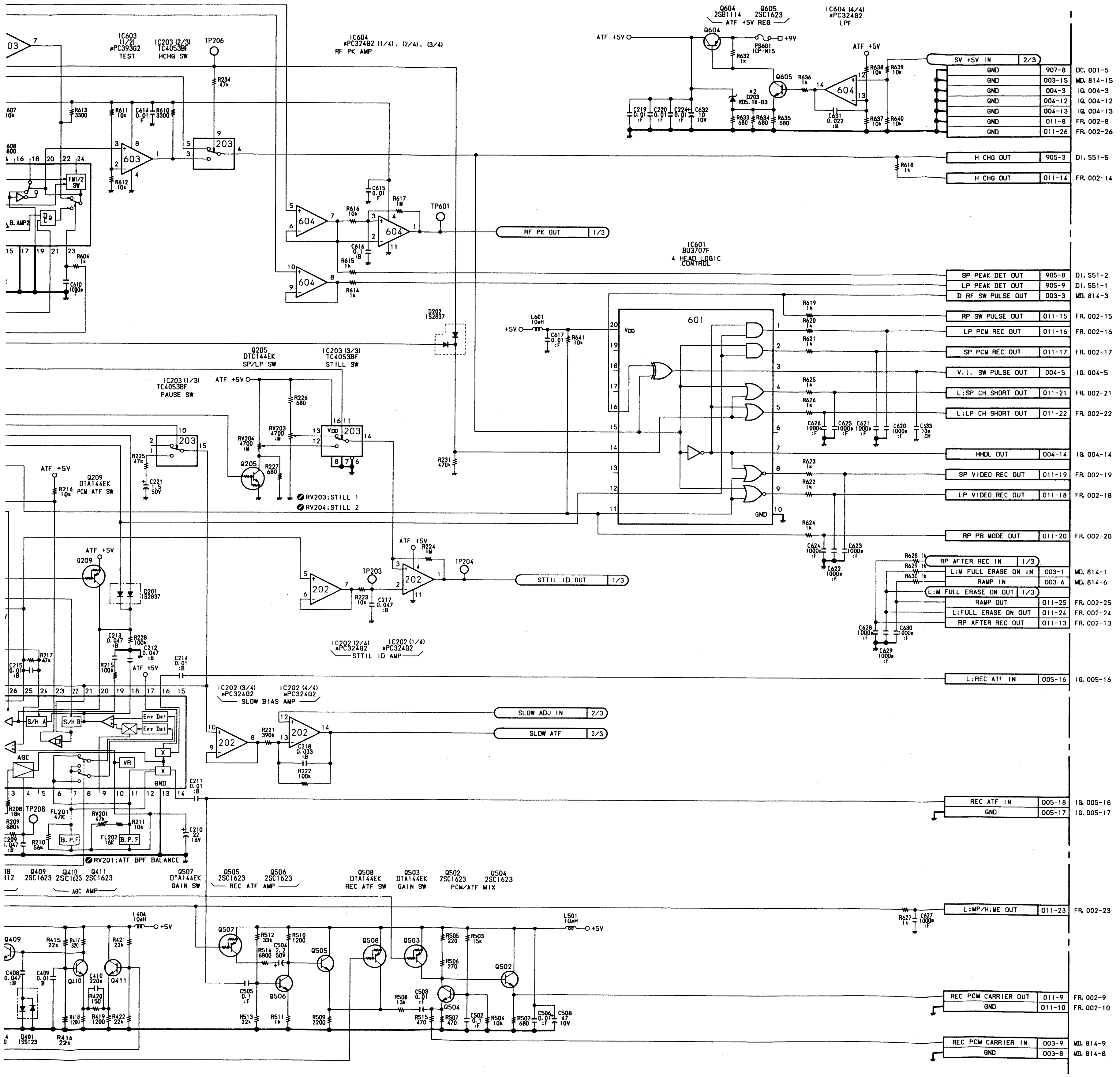
SE-10(3/3)

1-630-906-11, 12(1)
EVO-9800

SE-10 (3/3); ATF SERVO
IG-4; TERMINAL

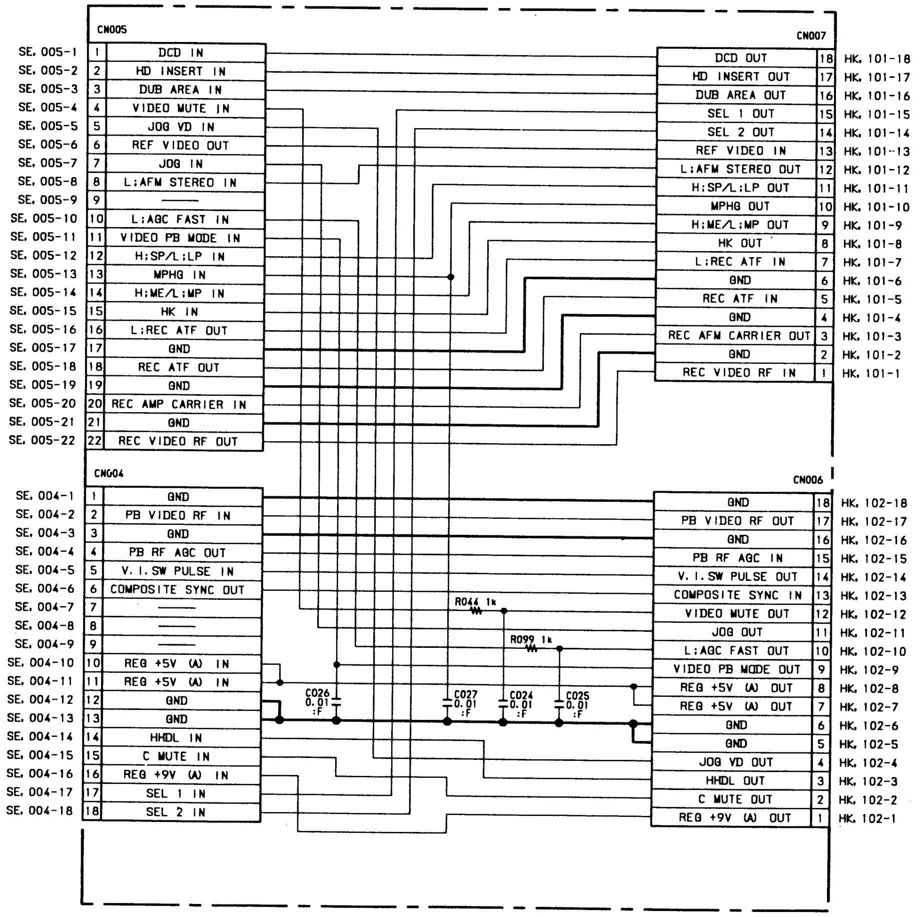
S/N 10061 AND HIGHER (J)
S/N 10341 AND HIGHER (UC)


Q601 DTA144EK GAIN CONTROL SW
IC602 BA7036LS RF AMP/CLAMP
IC603 (2/2) μPC393G2 SP/LP LEVEL COMPARATOR
IC603 (1/2) μPC393G2 TEST
IC203 (2/3) TC4053BF HCHG SW
TP206
IC604 μPC324G2 (1/4), (2/4), (3/4) RF PK AMP
Q604 2SB1114
Q605 2SC1623
ATF +5V REG
IC604 (4/4) μPC324G2 LPF
ATF +5V
PS601 ICP-N15
+9V
AUTO IN
HCHM IN
GAIN CONT IN
REC AFM CARRIER IN
REC AFM CARRIER OUT
GND
REC VIDEO RF IN
REC VIDEO RF OUT
SP PB RF IN
LP PB RF IN
COMPOSITE SYNC IN
COMPOSITE SYNC OUT
COMPA CONT IN
JOG OUT
JOG IN
STILL SW IN
L:LP/H:SP (SOURCE) IN
PAUSE IN
TSA IN
RAREA IN
P REC OUT
RP PB MODE IN
L:ATF LOCK OUT
ATF HOLD IN
PCM AREA IN
TSB IN
ATF ERROR OUT
C MUTE IN
C MUTE OUT
HD INSERT IN
HD INSERT OUT
DUB AREA IN
DUB AREA OUT
L:PCM ATF IN
PB PCM CARRIER IN
PB PCM CARRIER OUT
PB VIDEO RF IN
PB VIDEO RF OUT
PB AFM CARRIER OUT
A SW IN
HB DET OUT
L:V INS IN
L:MP/H:ME IN
REG +9V IN
REG +9V OUT
REG +5V IN
REG +5V OUT
REG -5V IN
REG -5V OUT
PB RF AGC IN
L:ATF INH IN
SV +5V IN
H CHG OUT
RF PK OUT
IC601 BU3707F 4 HEAD LOGIC CONTROL
SP PEAK DET OUT
LP PEAK DET OUT
D RF SW PULSE OUT
RP SW PULSE OUT
LP PCM REC OUT
SP PCM REC OUT
V. I. SW PULSE OUT
L:SP CH SHORT OUT
L:LP CH SHORT OUT
HHDL OUT
SP VIDEO REC OUT
LP VIDEO REC OUT
RP PB MODE OUT
RP AFTER REC IN
L:M FULL ERASE ON IN
RAMP IN
L:M FULL ERASE ON OUT
RAMP OUT
L:FULL ERASE ON OUT
RP AFTER REC OUT
Q205 DTC144EK SP/LP SW
IC203 (3/3) TC4053BF STILL SW
IC203 (1/3) TC4053BF PAUSE SW
RV203:STILL 1
RV204:STILL 2
IC204 SN74HC00NS PCM ATF TIMING CONTROL
Q210 DTC144EK ATF HOLD SW
Q209 DTA144EK PCM ATF SW
STILL ID OUT
IC202 (2/4) μPC324G2
IC202 (1/4) μPC324G2
STILL ID AMP
Q206 DTA144EK Q207 DTA144EK PCM ATF SW
Q208 2SC1623-L6 PCM BUFFER
Q201 2SC1623 Y RF BUFFER
Q202 2SA812 LPF
IC201 CXA1042M ATF SERVO
IC202 (3/4) μPC324G2
IC202 (4/4) μPC324G2
SLOW BIAS AMP
SLOW ADJ IN
SLOW ATF
L:REC ATF IN
REC ATF IN
RV201:ATF BPF BALANCE
Q401 2SA812 Q402 2SC1623 Q405 2SC1623 Q403 2SC1623 Q404 2SA812 Q406 2SA812 Q407 2SC1623 Q408 2SA812
HI BAND DETECTOR
Q409 2SC1623 Q410 2SC1623 Q411 2SC1623
AGC AMP
Q507 DTA144EK GAIN SW
Q505 2SC1623 Q506 2SC1623 REC ATF AMP
Q508 DTA144EK REC ATF SW
Q503 DTA144EK GAIN SW
Q502 2SC1623 Q504 2SC1623 PCM/ATF MIX
L:MP/H:ME OUT
REC PCM CARRIER OUT
REC PCM CARRIER IN


IC603 (1/2) μPC393G2 TEST
IC203 (2/3) TC4053BF HCHG SW
TP206
IC604 μPC324G2 (1/4), (2/4), (3/4) RF PK AMP
Q604 2SB1114 Q605 2SC1623 ATF +5V REG
IC604 (4/4) μPC324G2 LPF
ATF +5V
PS601 ICP-N15
+9V
SV +5V IN 2/3
GND 907-8 DC. 001-5
GND 003-15 MD. 814-15
GND 004-3 IG. 004-3
GND 004-12 IG. 004-12
GND 004-13 IG. 004-13
GND 011-8 FR. 002-8
GND 011-26 FR. 002-26
H CHG OUT 905-3 DI. 551-5
H CHG OUT 011-14 FR. 002-14
TP601
RF PK OUT 1/3
IC601 BU3707F 4 HEAD LOGIC CONTROL
SP PEAK DET OUT 905-8 DI. 551-2
LP PEAK DET OUT 905-9 DI. 551-1
D RF SW PULSE OUT 003-3 MD. 814-3
D202 1SS237
RP SW PULSE OUT 011-15 FR. 002-15
LP PCM REC OUT 011-16 FR. 002-16
SP PCM REC OUT 011-17 FR. 002-17
V. I. SW PULSE OUT 004-5 IG. 004-5
L;SP CH SHORT OUT 011-21 FR. 002-21
L;LP CH SHORT OUT 011-22 FR. 002-22
HHDL OUT 004-14 IG. 004-14
SP VIDEO REC OUT 011-19 FR. 002-19
LP VIDEO REC OUT 011-18 FR. 002-18
RP PB MODE OUT 011-20 FR. 002-20
RP AFTER REC IN 1/3
L;M FULL ERASE ON IN 003-1 MD. 814-1
RAMP IN 003-6 MD. 814-6
L;M FULL ERASE ON OUT 1/3
RAMP OUT 011-25 FR. 002-25
L;FULL ERASE ON OUT 011-24 FR. 002-24
RP AFTER REC OUT 011-13 FR. 002-13
L;REC ATF IN 005-16 IG. 005-16
Q205 DTC144EK SP/LP SW
IC203 (3/3) TC4053BF STILL SW
IC203 (1/3) TC4053BF PAUSE SW
RV203:STILL 1
RV204:STILL 2
Q209 DTA144EK PCM ATF SW
D201 1SS237
TP203 TP204
STTIL ID OUT 1/3
IC202 (2/4) μPC324G2 IC202 (1/4) μPC324G2 STTIL ID AMP
IC202 (3/4) μPC324G2 IC202 (4/4) μPC324G2 SLOW BIAS AMP
SLOW ADJ IN 2/3
SLOW ATF 2/3
AGC
S/H A S/H B Env Det VR
TP208
RV201:ATF BPF BALANCE
REC ATF IN 005-18 IG. 005-18
GND 005-17 IG. 005-17
Q409 2SC1623 Q410 2SC1623 Q411 2SC1623 AGC AMP
Q507 DTA144EK GAIN SW
Q505 2SC1623 Q506 2SC1623 REC ATF AMP
Q508 DTA144EK REC ATF SW
Q503 DTA144EK GAIN SW
Q502 2SC1623 Q504 2SC1623 PCM/ATF MIX
L:MP/H:ME OUT 011-23 FR. 002-23
REC PCM CARRIER OUT 011-9 FR. 002-9
GND 011-10 FR. 002-10
REC PCM CARRIER IN 003-9 MD. 814-9
GND 003-8 MD. 814-8
D401 1SS123

NOTE;

MARK	CHANGE INFORMATION	SERIAL NO
*1	C205 CHANGED 0.01 → 0.022	J;10381- UC;11071-
*2	D203 CHANGED RD5.1ESB3 → RD5.1MB3	J;10381- UC;11671-
*3	C205 CHANGED 0.022 → 0.01	
*4	R229 CHANGED 18K → 33K	


CN005
CN007
SE. 005-1 1 DCD IN
SE. 005-2 2 HD INSERT IN
SE. 005-3 3 DUB AREA IN
SE. 005-4 4 VIDEO MUTE IN
SE. 005-5 5 JOG VD IN
SE. 005-6 6 REF VIDEO OUT
SE. 005-7 7 JOG IN
SE. 005-8 8 L;AFM STEREO IN
SE. 005-9 9
SE. 005-10 10 L;AGC FAST IN
SE. 005-11 11 VIDEO PB MODE IN
SE. 005-12 12 H;SP/L;LP IN
SE. 005-13 13 MPHG IN
SE. 005-14 14 H;ME/L;MP IN
SE. 005-15 15 HK IN
SE. 005-16 16 L;REC ATF OUT
SE. 005-17 17 GND
SE. 005-18 18 REC ATF OUT
SE. 005-19 19 GND
SE. 005-20 20 REC AMP CARRIER IN
SE. 005-21 21 GND
SE. 005-22 22 REC VIDEO RF OUT
DCD OUT 18 HK. 101-18
HD INSERT OUT 17 HK. 101-17
DUB AREA OUT 16 HK. 101-16
SEL 1 OUT 15 HK. 101-15
SEL 2 OUT 14 HK. 101-14
REF VIDEO IN 13 HK. 101-13
L;AFM STEREO OUT 12 HK. 101-12
H;SP/L;LP OUT 11 HK. 101-11
MPHG OUT 10 HK. 101-10
H;ME/L;MP OUT 9 HK. 101-9
HK OUT 8 HK. 101-8
L;REC ATF IN 7 HK. 101-7
GND 6 HK. 101-6
REC ATF IN 5 HK. 101-5
GND 4 HK. 101-4
REC AFM CARRIER OUT 3 HK. 101-3
GND 2 HK. 101-2
REC VIDEO RF IN 1 HK. 101-1
CNG04
CN006
SE. 004-1 1 GND
SE. 004-2 2 PB VIDEO RF IN
SE. 004-3 3 GND
SE. 004-4 4 PB RF AGC OUT
SE. 004-5 5 V. I. SW PULSE IN
SE. 004-6 6 COMPOSITE SYNC OUT
SE. 004-7 7
SE. 004-8 8
SE. 004-9 9
SE. 004-10 10 REG +5V (A) IN
SE. 004-11 11 REG +5V (A) IN
SE. 004-12 12 GND
SE. 004-13 13 GND
SE. 004-14 14 HHDL IN
SE. 004-15 15 C MUTE IN
SE. 004-16 16 REG +9V (A) IN
SE. 004-17 17 SEL 1 IN
SE. 004-18 18 SEL 2 IN
GND 18 HK. 102-18
PB VIDEO RF OUT 17 HK. 102-17
GND 16 HK. 102-16
PB RF AGC IN 15 HK. 102-15
V. I. SW PULSE OUT 14 HK. 102-14
COMPOSITE SYNC IN 13 HK. 102-13
VIDEO MUTE OUT 12 HK. 102-12
JOG OUT 11 HK. 102-11
L;AGC FAST OUT 10 HK. 102-10
VIDEO PB MODE OUT 9 HK. 102-9
REG +5V (A) OUT 8 HK. 102-8
REG +5V (A) OUT 7 HK. 102-7
GND 6 HK. 102-6
GND 5 HK. 102-5
JOG VD OUT 4 HK. 102-4
HHDL OUT 3 HK. 102-3
C MUTE OUT 2 HK. 102-2
REG +9V (A) OUT 1 HK. 102-1
R044 1k
R099 1k
C026 0.01 :F
C027 0.01 :F
C024 0.01 :F
C025 0.01 :F

IG-4

1-630-904-13, 14(1)
EVO-9800
EVO-9800P

SE-10(3/3)

1-630-906-13, 14(1)
EVO-9800

SE-10; SERVO, SYSTEM CONTROL
IG-4; TERMINAL

S/N UP TO 10060 (J)
S/N UP TO 10340 (UC)

SE-10(1-630-906-11,12)C

CN001	A-6
CN002	D-6
CN003	G-6
CN004	G-1
CN005	D-1
CN901	A-5
CN902	A-1
CN903	A-1
CN904	B-1
CN905	H-4
CN906	H-2
CN907	H-5
D003	B-5
D004	B-6
D005	B-6
D006	D-2
D007	D-4
D012	C-4
D101	D-6
D102	D-5
D104	E-5
D105	E-5
D106	E-5
D201	F-4
D202	G-2
D401	G-2
FL201	G-4
FL202	G-4
IC001	B-2
IC002	D-2
IC003	A-5
IC101	C-5
IC102	G-2
IC103	D-6
IC104	C-6
IC105	D-5
IC106	C-4
IC107	G-2
IC108	F-2
IC201	G-4
IC202	G-4
IC203	H-3
IC204	F-5
IC301	F-2
IC302	E-2
IC303	E-1
IC305	E-2
IC601	F-6
IC602	G-5
IC603	H-4
IC604	H-4
PS601	H-3
Q003	B-5
Q004	B-5
Q007	D-2
Q009	D-3
Q010	D-4
Q011	C-4
Q114	D-2
Q204	H-3
Q206	F-5
Q207	F-5
Q210	F-4
Q303	D-2
Q305	D-2
Q306	D-2
Q401	H-2
Q403	H-1
Q406	H-2
Q408	H-2
Q409	G-2
Q411	G-2
Q502	G-6
Q503	G-6
Q505	G-6
Q506	G-5
Q507	G-5
Q508	G-6
Q601	G-4
Q604	H-3
Q702	D-4
Q704	E-4
Q713	D-4
RV101	C-6
RV102	E-6
RV103	E-5
RV104	D-5
RV105	D-5
RV106	D-5
RV201	G-4
RV202	H-4
RV203	H-3
RV204	H-3
RV301	F-1
RV302	F-2
RV303	E-1
RV304	E-2
TP001	C-2
TP002	D-6
TP101	D-6
TP102	D-5
TP103	F-3
TP104	D-4
TP105	D-4
TP106	D-4
TP107	C-5
TP108	D-5
TP201	H-3
TP202	H-1
TP203	H-4
TP204	F-5
TP205	F-5
TP206	G-2
TP207	B-2
TP208	H-3
TP301	E-2
TP302	F-3
TP601	F-6
X001	B-2
X002	C-1
X003	A-4
X004	D-3
X101	C-5

SE-10(1-630-906-11,12)S

CN011	F-5
CN012	B-5
D008	C-2
D009	B-2
D010	B-2
D107	D-5
D108	D-5
D109	D-4
D110	D-4
D111	C-5
D112	F-2
D301	E-1
D302	E-2
D701	E-5
IC004	D-3
IC007	C-3
IC008	A-2
IC304	F-3
Q002	B-2
Q005	C-2
Q006	D-2
Q008	D-2
Q014	C-2
Q015	C-2
Q101	E-6
Q102	E-6
Q103	E-5
Q104	C-5
Q106	C-5
Q107	D-5
Q108	D-5
Q109	D-4
Q110	D-4
Q111	C-5
Q112	D-2
Q113	D-2
Q116	F-2
Q201	F-5
Q202	G-4
Q203	H-3
Q205	H-3
Q208	F-5
Q209	F-4
Q211	H-4
Q301	F-3
Q302	E-1
Q304	D-2
Q402	H-1
Q404	H-2
Q405	H-1
Q407	H-2
Q410	H-2
Q504	G-6
Q605	H-3
Q701	D-4
Q703	E-5
Q705	E-4
Q706	E-4
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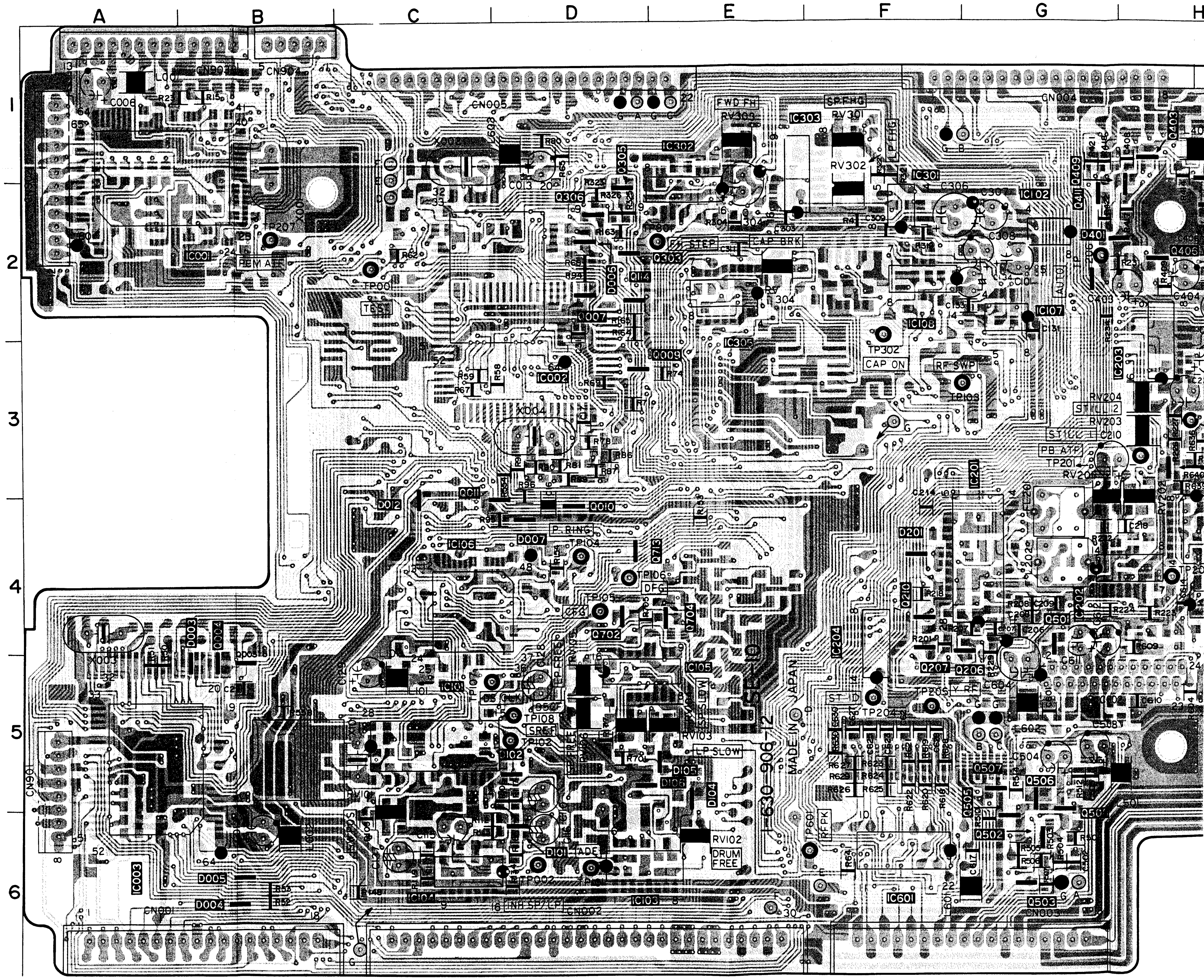
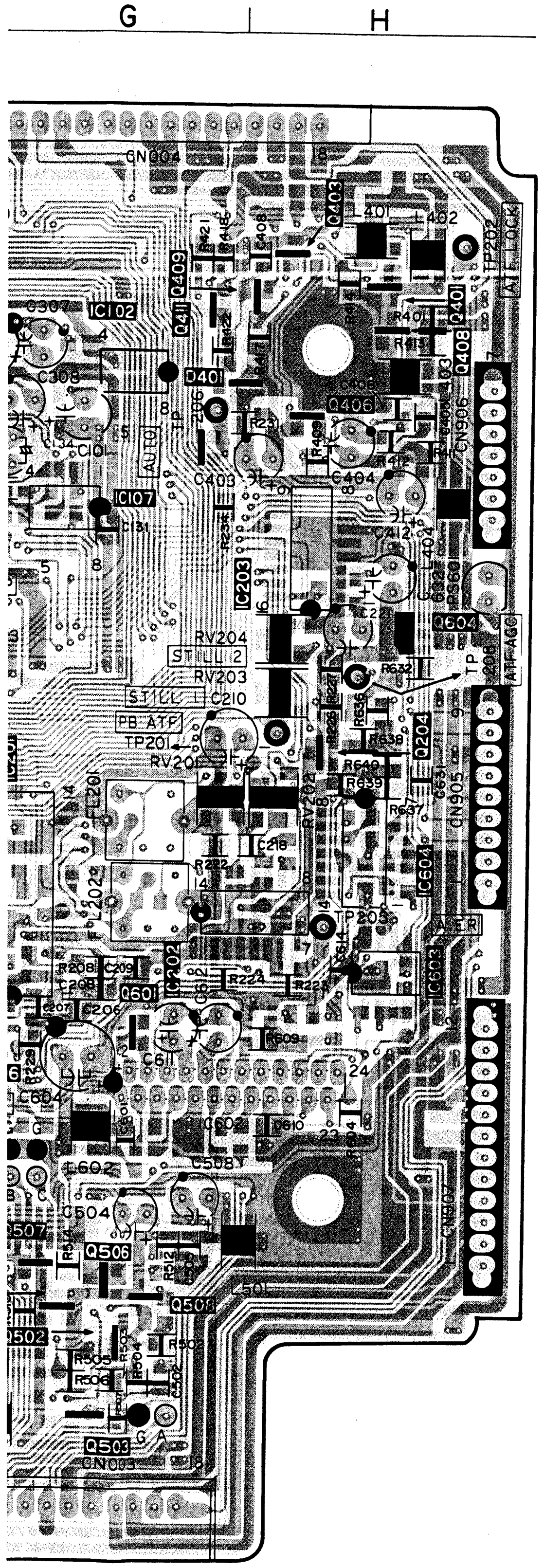
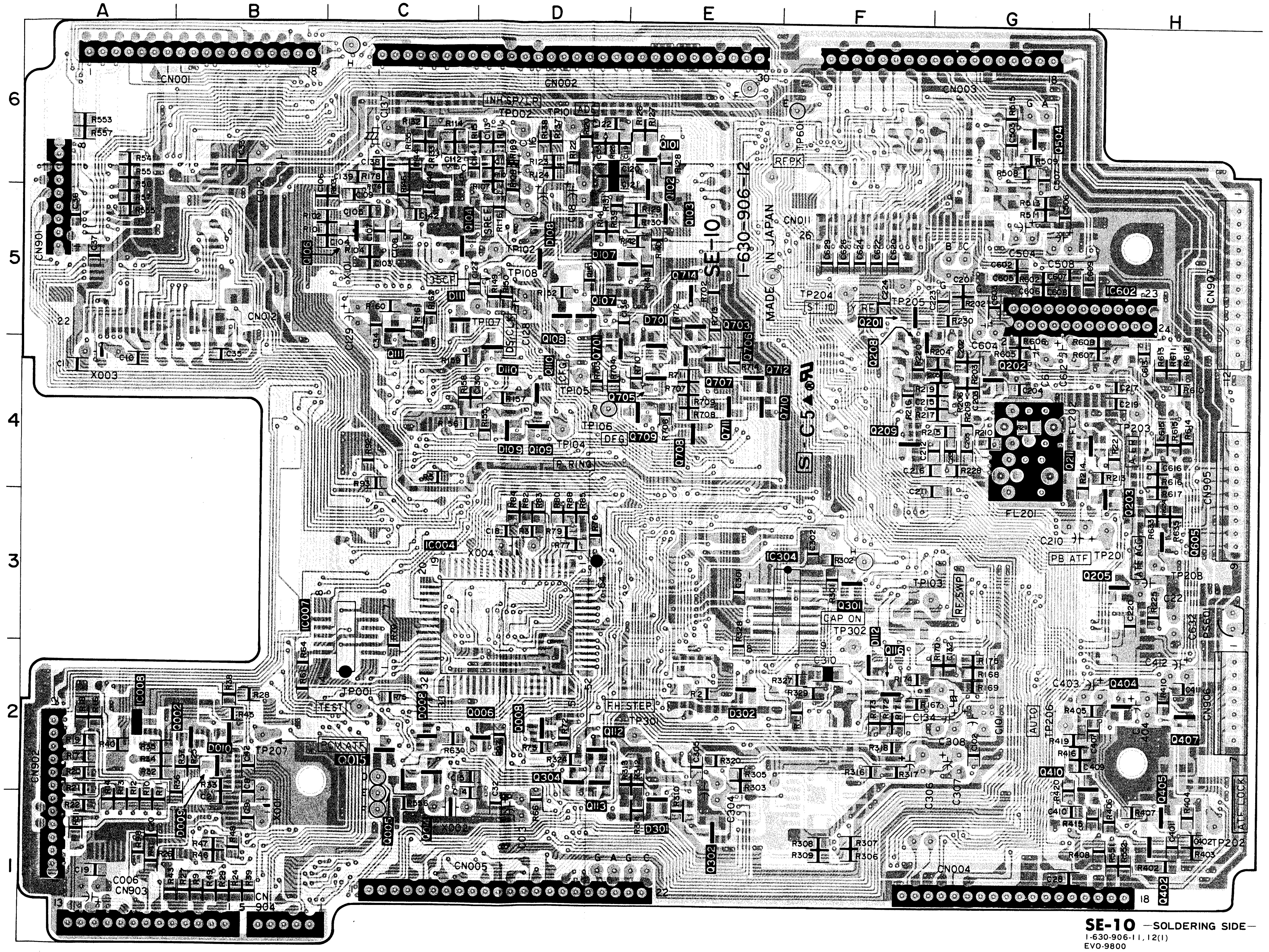
Q711	E-4
Q712	E-4
Q714	E-5


A
B
C
D
E
F
G
H
1
2
3
4
5
6
CN902
CN904
CN005
CN004
FWD FH
SP FHG
RV300
RV301
RV302
IC303
IC302
IC301
IC102
IC001
TP207
REM AFC
TP001
FH STEP
CAP BRK
IC305
IC108
IC107
TP302
CAP ON
RF SWP
TP103
STILL 2
STILL 1
PB ATF
TP201
RV203
RV204
X004
IC002
Q010
P.RING
IC106
D007
TP104
DFG
CFG
Q702
IC105
LP SLOW
RV103
RV102
DRUM FREE
1-630-906-12
MADE IN JAPAN
SE-10
ST-ID
TP204
TP205
IC601
IC103
IC104
INH SP/LP
CN002
CN001
D004
D005
IC003
X003
CN901
TP601
RF PK
IC204
D201
IC201
Q506
Q507
Q502
Q503
CN003

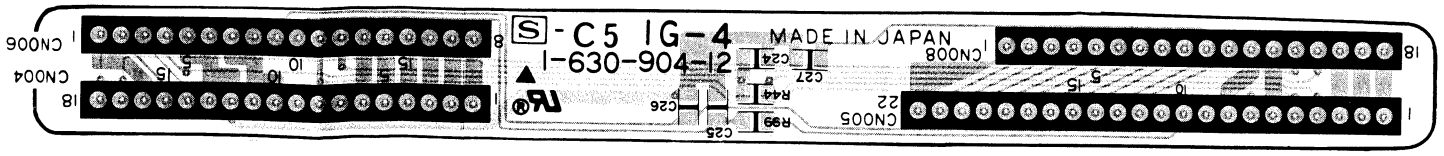
SE-10 —CON
1-630-906-11,12(1)
EVO-9800


G
H
CN004
IC102
IC107
IC203
RV204
STILL 2
RV203
STILL
PB ATF
TP201
Q406
D401
AUTO
ATF LOCK
TP202
CN906
CN905
ATF AGC
IC603
CN003

SE-10 —COMPONENT SIDE—
1-630-906-11, 12(1)
EVO-9800


A
B
C
D
E
F
G
H
6
5
4
3
2
1
CN001
CN002
CN003
CN004
CN005
CN901
CN902
CN903
CN904
CN905
CN906
CN907
CN011
CN012
SE-10
1-630-906-12
MADE IN JAPAN
C5
INH SP/LP
TP002
TP101
TP102
TP104
TP105
TP106
TP107
TP108
TP103
TP201
TP202
TP203
TP204
TP205
TP206
TP207
TP208
TP301
TP302
TP601
TP001
RF PK
ST ID
RF
DFG
CFG
P RING
IC004
IC007
IC008
IC302
IC304
IC602
X003
X004
X001
X002
FL201
PB ATF
ATF AGC
RE SWP
CAP ON
RH STEP
TEST
PCM ATT
AUTO
ATF LOCK

SE-10 —SOLDERING SIDE—
1-630-906-11, 12(1)
EVO-9800


CN006
CN004
CN008
CN005
S - C5 IG-4
1-630-904-12
MADE IN JAPAN
18
1
22

IG-4 —SOLDERING SIDE—
1-630-905-11, 12(1)
EVO-9800

SE-10 ; SERVO, SYSTEM CONTROL
IG-4 ; TERMINAL

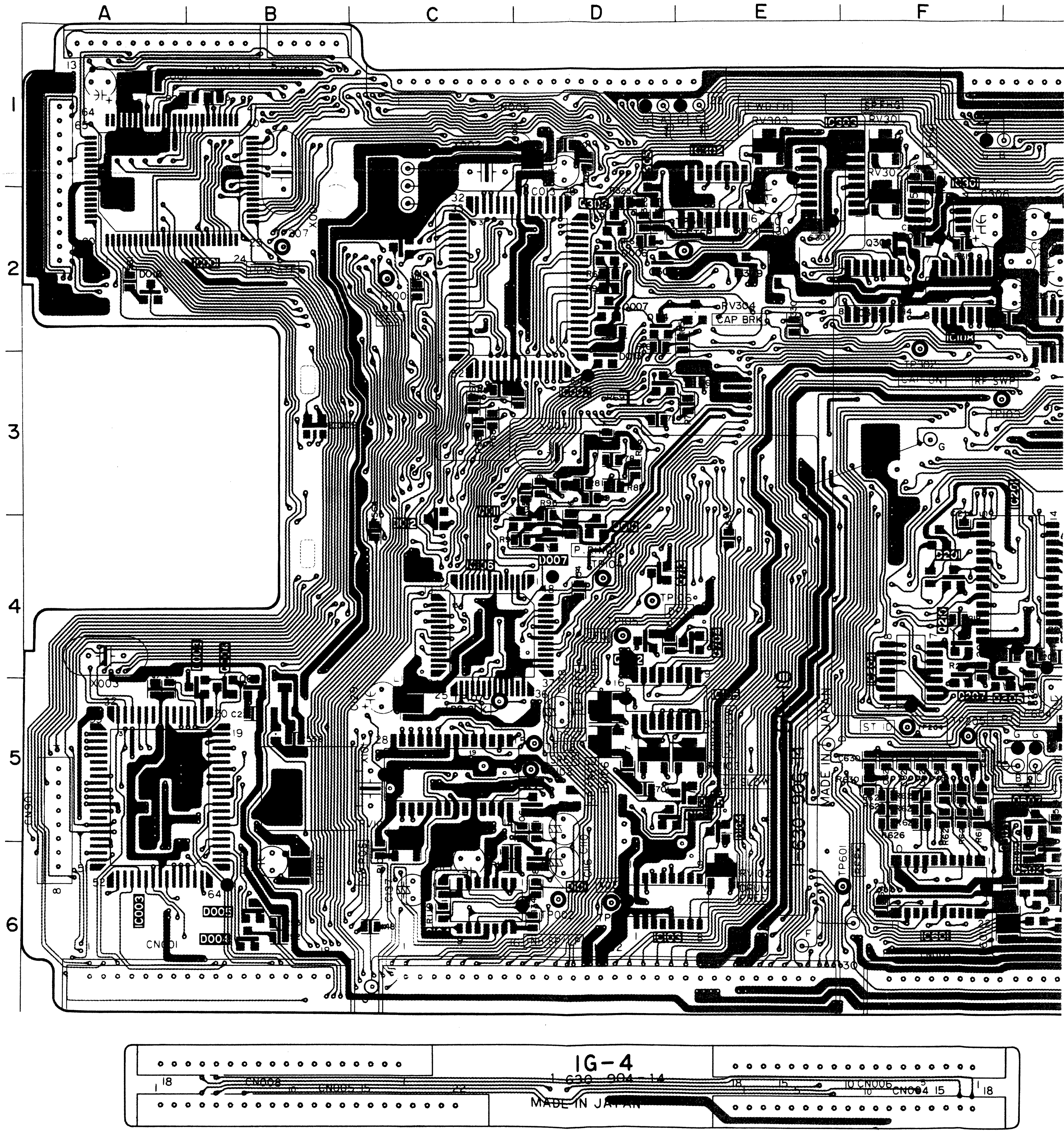
S/N 10061 AND HIGHER (J)
S/N 10341 AND HIGHER (UC)

SE-10(1-630-906-13, 14)C

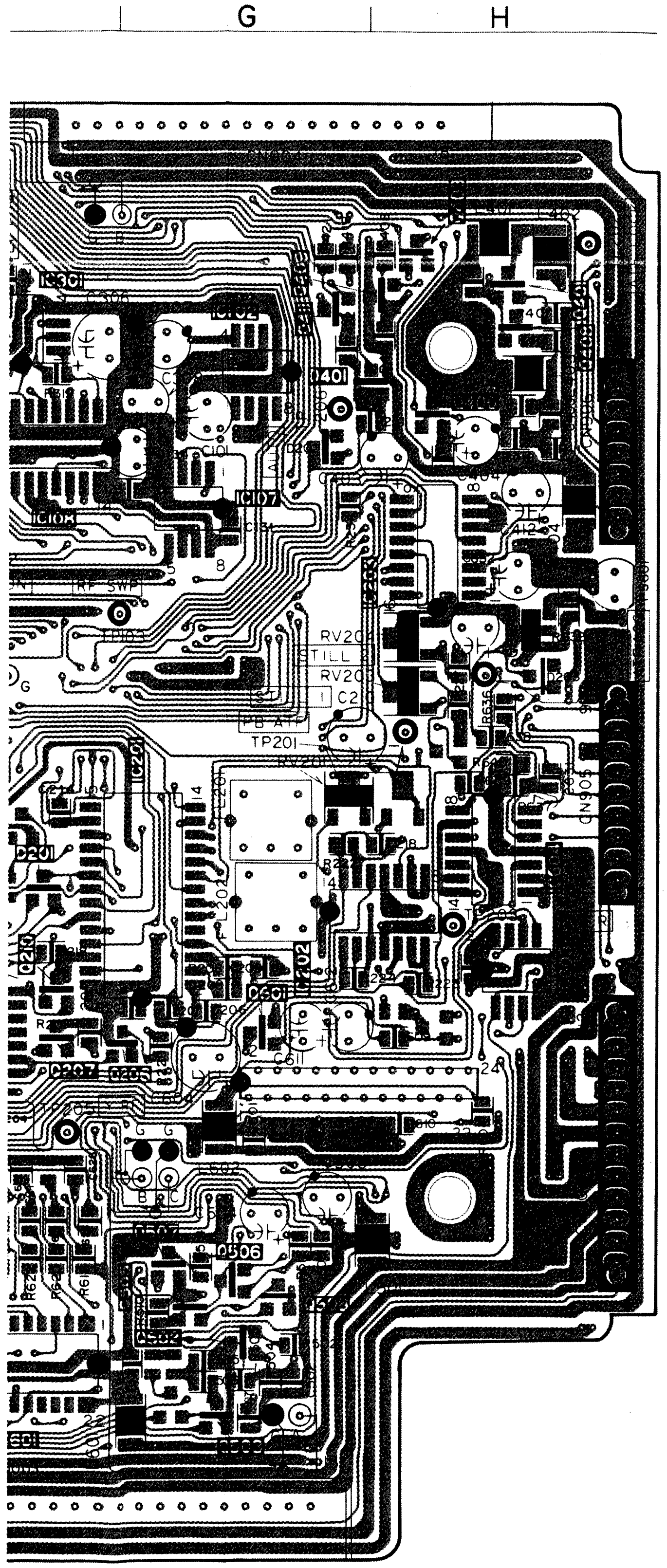
CN001	A-6
CN002	D-6
CN003	G-6
CN004	G-1
CN005	D-1
CN901	A-5
CN902	A-1
CN903	A-1
CN904	B-1
CN905	H-4
CN906	H-2
CN907	H-5
D003	B-5
D004	B-6
D005	B-6
D006	D-2
D007	D-4
D012	C-4
D101	D-6
D102	D-5
D104	E-5
D105	E-5
D106	E-5
D201	F-4
D202	G-2
D401	G-2
FL201	G-4
FL202	G-4
IC001	B-2
IC002	D-2
IC003	A-5
IC101	C-5
IC102	G-2
IC103	D-6
IC104	C-6
IC105	D-5
IC106	C-4
IC107	G-2
IC108	F-2
IC201	G-4
IC202	G-4
IC203	H-3
IC204	F-5
IC301	F-2
IC302	E-2
IC303	E-1
IC305	E-2
IC601	F-6
IC602	G-5
IC603	H-4
IC604	H-4
PS601	H-3
Q003	B-5
Q004	B-5
Q007	D-2
Q009	D-3
Q010	D-4
Q011	C-4
Q114	D-2
Q204	H-3
Q206	F-5
Q207	F-5
Q210	F-4
Q303	D-2
Q305	D-2
Q306	D-2
Q401	H-2
Q403	H-1
Q406	H-2
Q408	H-2
Q409	G-2
Q411	G-2
Q502	G-6
Q503	G-6
Q505	G-6
Q506	G-5
Q507	G-5
Q508	G-6
Q601	G-4
Q604	H-3
Q702	D-4
Q704	E-4
Q713	D-4
RV101	C-6
RV102	E-6
RV103	E-5
RV104	D-5
RV105	D-5
RV106	D-5
RV201	G-4
RV202	H-4
RV203	H-3
RV204	H-3
RV301	F-1
RV302	F-2
RV303	E-1
RV304	E-2
TP001	C-2
TP002	D-6
TP101	D-6
TP102	D-5
TP103	F-3
TP104	D-4
TP105	D-4
TP106	D-4
TP107	C-5
TP108	D-5
TP201	H-3
TP202	H-1
TP203	H-4
TP204	F-5
TP205	F-5
TP206	G-2
TP207	B-2
TP208	H-3
TP301	E-2
TP302	F-3
TP601	F-6
X001	B-2
X002	C-1
X003	A-4
X004	D-3
X101	C-5

SE-10(1-630-906-13, 14)S

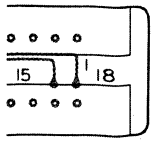
CN011	F-5
CN012	B-5
D008	C-2
D009	B-2
D010	B-2
D107	D-5
D108	D-5
D109	D-4
D110	D-4
D111	C-5
D112	F-2
D301	E-1
D302	E-2
D701	E-5
IC004	D-3
IC007	C-3
IC008	A-2
IC304	F-3
Q002	B-2
Q005	C-2
Q006	D-2
Q008	D-2
Q014	C-2
Q015	C-2
Q101	E-6
Q102	E-6
Q103	E-5
Q104	C-5
Q106	C-5
Q107	D-5
Q108	D-5
Q109	D-4
Q110	D-4
Q111	C-5
Q112	D-2
Q113	D-2
Q116	F-2
Q201	F-5
Q202	G-4
Q203	H-3
Q205	H-3
Q208	F-5
Q209	F-4
Q211	H-4
Q301	F-3
Q302	E-1
Q304	D-2
Q402	H-1
Q404	H-2
Q405	H-1
Q407	H-2
Q410	H-2
Q504	G-6
Q605	H-3
Q701	D-4
Q703	E-5
Q705	E-4
Q706	E-4
Q707	E-4
Q708	E-4
Q709	E-4
Q710	E-4
Q711	E-4
Q712	E-4
Q714	E-5



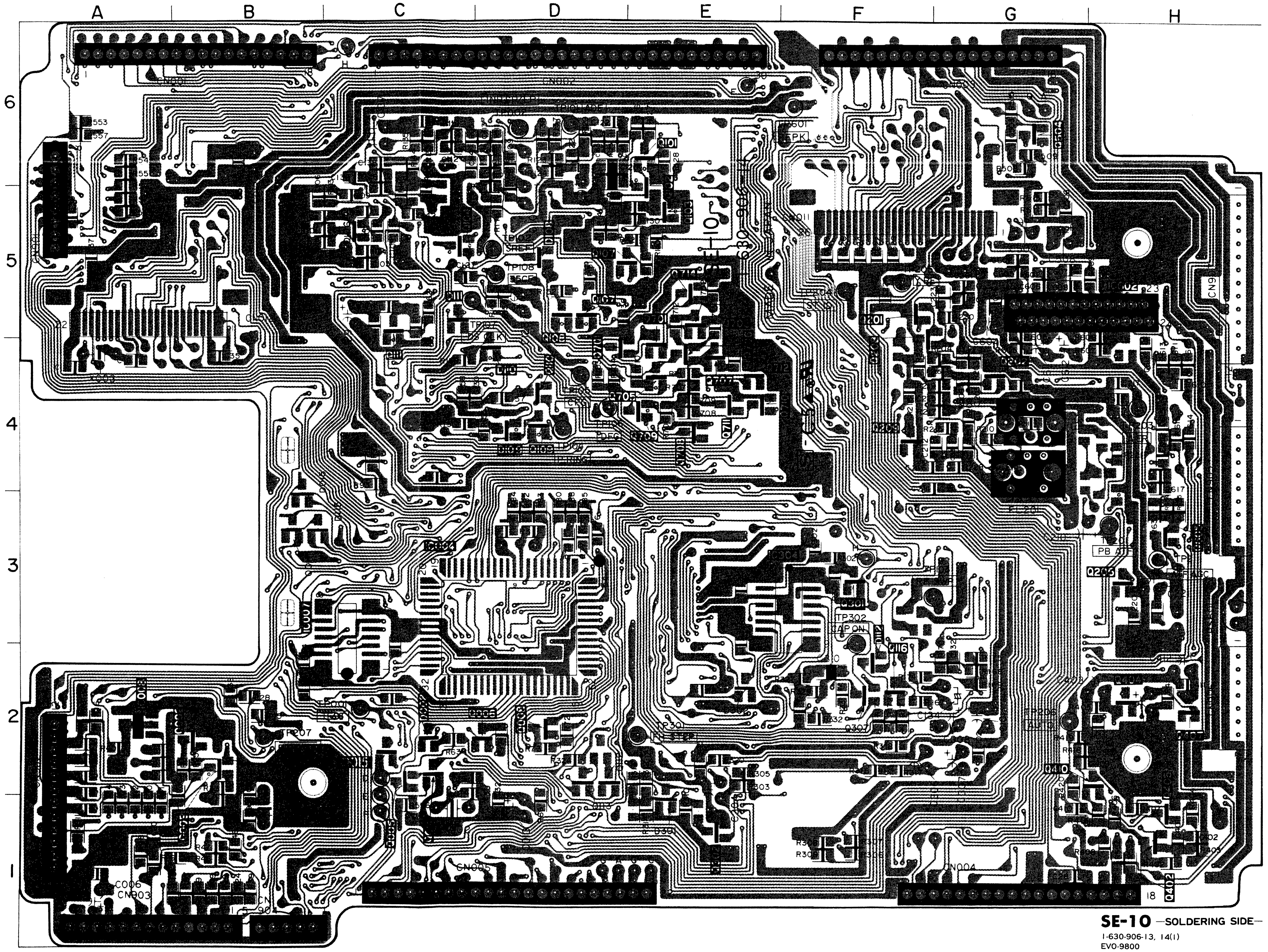
IG-4 —COMPONENT SIDE—
1-630-905-13, 14(1)
EVO-9800


G
H
RF SW
RV201
STILL
PB ATF
TP201
CN905
CN903
CN904

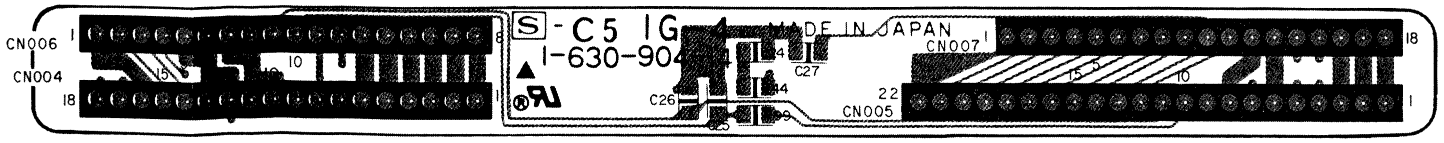
SE-10 —COMPONENT SIDE—
1-630-906-13, 14(1)
EVO-9800



MPONENT SIDE—
1)


A
B
C
D
E
F
G
H
6
5
4
3
2
1
CN001
CN002
CN003
CN004
CN005
CN9
TP108
TP302
JAPON
TP207
PB ATF
AUTO
18

SE-10 —SOLDERING SIDE—
1-630-906-13, 14(1)
EVO-9800

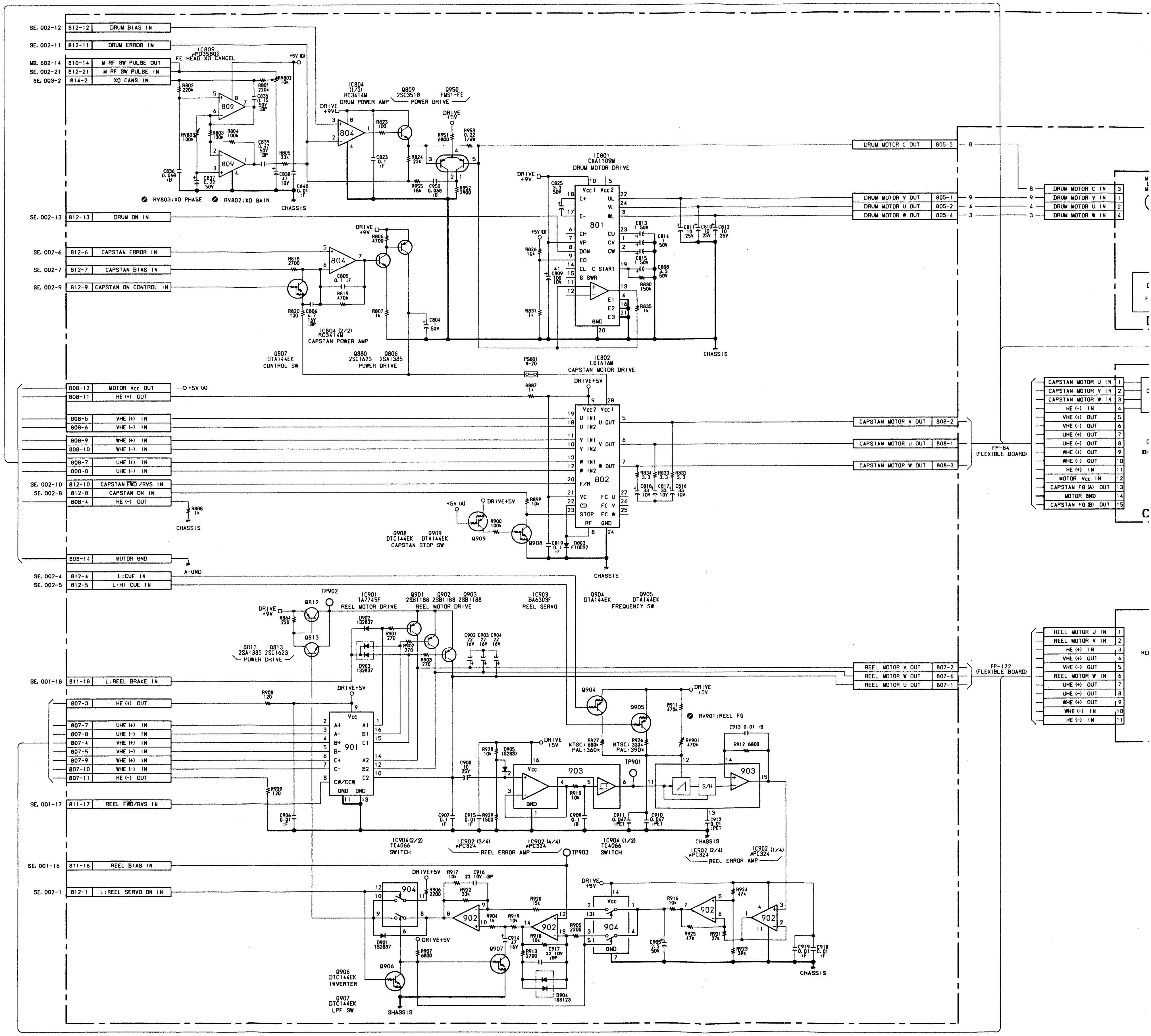

CN006
CN004
CN007
CN005
S -C5 IG-4 MADE IN JAPAN
1-630-904
C26
C27
1
18
10
15
22

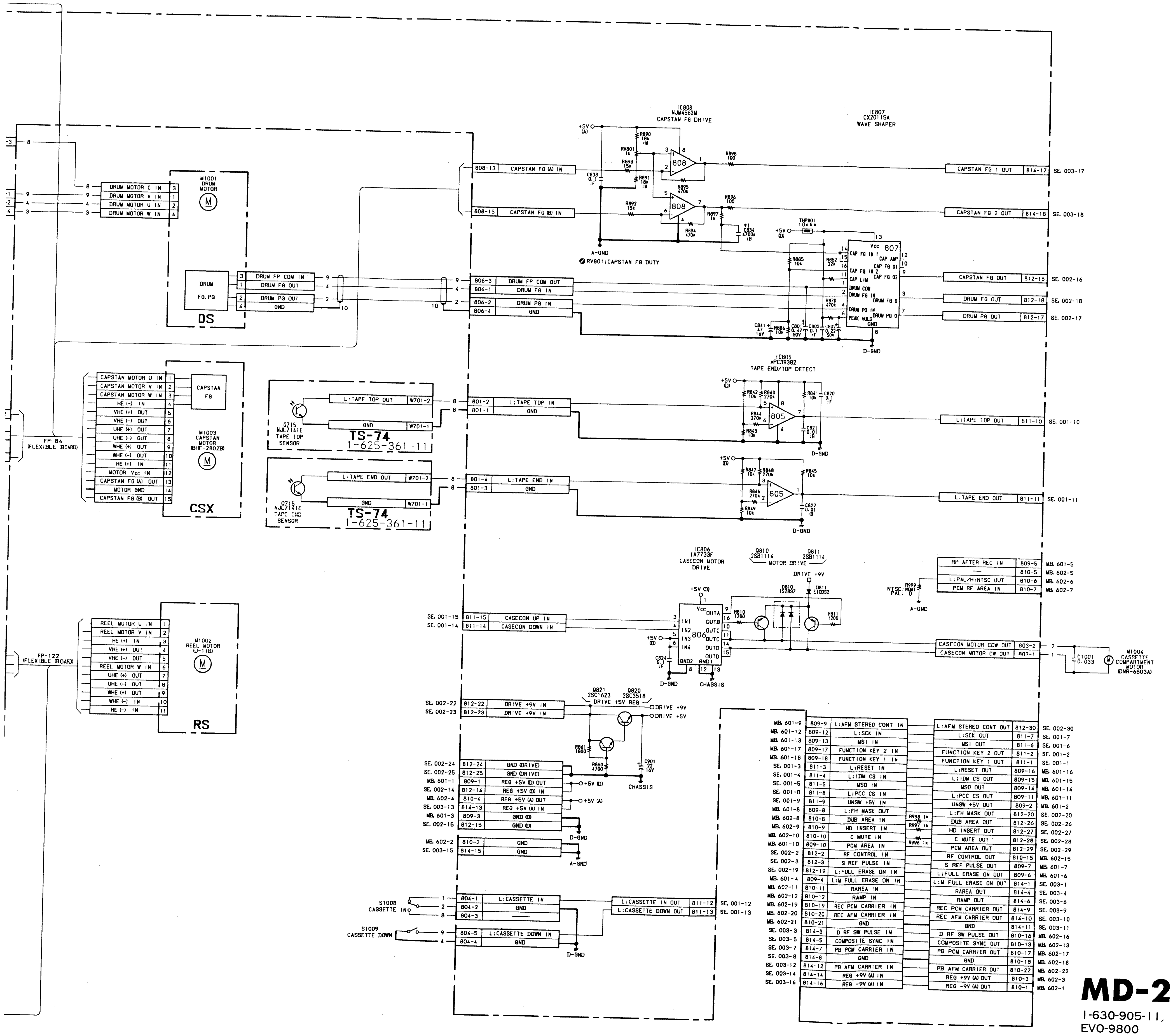
IG-4 —SOLDERING SIDE—
1-630-905-13, 14(1)
EVO-9800

MD-23; DRUM/CAPSTAN/REEL MOTOR DRIVE
TS-74; TAPE TOP/END SENSOR

NOTE:

MARK	CHANGE INFORMATION	SERIAL NO
*1	CHANGED C809 10/35V→100/10V C834 1800P →4700P	J:10061- UC:10341-


SE. 002-12 812-12 DRUM BIAS IN
SE. 002-11 812-11 DRUM ERROR IN
MB. 602-14 810-14 M RF SW PULSE OUT
SE. 002-21 812-21 M RF SW PULSE IN
SE. 003-2 814-2 XO CANS IN
IC809 μPD358G2 FE HEAD XO CANCEL
RV803:XO PHASE
RV802:XO GAIN
CHASSIS
IC804 (1/2) RC3414M DRUM POWER AMP
Q809 2SC3518
Q950 FMS1-FE
POWER DRIVE
DRIVE +9V
DRIVE +5V
SE. 002-13 812-13 DRUM ON IN
SE. 002-6 812-6 CAPSTAN ERROR IN
SE. 002-7 812-7 CAPSTAN BIAS IN
SE. 002-9 812-9 CAPSTAN ON CONTROL IN
IC804 (2/2) RC3414M CAPSTAN POWER AMP
Q807 DTA144EK CONTROL SW
Q880 2SC1623
Q806 2SA1385
POWER DRIVE
IC801 CXA1109M DRUM MOTOR DRIVE
801
DRUM MOTOR C OUT 805-3
DRUM MOTOR V OUT 805-1
DRUM MOTOR U OUT 805-2
DRUM MOTOR W OUT 805-4
DRUM MOTOR C IN 3
DRUM MOTOR V IN 1
DRUM MOTOR U IN 2
DRUM MOTOR W IN 4
PS801 N-20
IC802 LB1616M CAPSTAN MOTOR DRIVE
802
DRIVE+5V
808-12 MOTOR Vcc OUT +5V (A)
808-11 HE (+) OUT
808-5 VHE (+) IN
808-6 VHE (-) IN
808-9 WHE (+) IN
808-10 WHE (-) IN
808-7 UHE (+) IN
808-8 UHE (-) IN
SE. 002-10 812-10 CAPSTAN FWD/RVS IN
SE. 002-8 812-8 CAPSTAN ON IN
808-4 HE (-) OUT
Q908 DTC144EK
Q909 DTA144EK
CAPSTAN STOP SW
CAPSTAN MOTOR V OUT 808-2
CAPSTAN MOTOR U OUT 808-1
CAPSTAN MOTOR W OUT 808-3
FP-84 (FLEXIBLE BOARD)
CAPSTAN MOTOR U IN 1
CAPSTAN MOTOR V IN 2
CAPSTAN MOTOR W IN 3
HE (-) IN 4
VHE (+) OUT 5
VHE (-) OUT 6
UHE (+) OUT 7
UHE (-) OUT 8
WHE (+) OUT 9
WHE (-) OUT 10
HE (+) IN 11
MOTOR Vcc IN 12
CAPSTAN FG (A) OUT 13
MOTOR GND 14
CAPSTAN FG (B) OUT 15
808-14 MOTOR GND
A-GND
SE. 002-4 812-4 L;CUE IN
SE. 002-5 812-5 L;HI CUE IN
TP902
Q812 2SA1385
Q813 2SC1623
POWER DRIVE
IC901 TA7745F REEL MOTOR DRIVE
Q901 2SB1188
Q902 2SB1188
Q903 2SB1188
REEL MOTOR DRIVE
IC903 BA6303F REEL SERVO
Q904 DTA144EK
Q905 DTA144EK
FREQUENCY SW
SE. 001-18 811-18 L;REEL BRAKE IN
807-3 HE (+) OUT
807-7 UHE (+) IN
807-8 UHE (-) IN
807-4 VHE (+) IN
807-5 VHE (-) IN
807-9 WHE (+) IN
807-10 WHE (-) IN
807-11 HE (-) OUT
SE. 001-17 811-17 REEL FWD/RVS IN
901
903
TP901
RV901:REEL FG
NTSC: 680k PAL: 360k
NTSC: 330k PAL: 390k
REEL MOTOR V OUT 807-2
REEL MOTOR W OUT 807-6
REEL MOTOR U OUT 807-1
FP-122 (FLEXIBLE BOARD)
REEL MOTOR U IN 1
REEL MOTOR V IN 2
HE (+) IN 3
VHE (+) OUT 4
VHE (-) OUT 5
REEL MOTOR W IN 6
UHE (+) OUT 7
UHE (-) OUT 8
WHE (+) OUT 9
WHE (-) IN 10
HE (-) IN 11
IC904 (2/2) TC4066 SWITCH
IC902 (3/4) μPC324
IC902 (4/4) μPC324
REEL ERROR AMP
TP903
IC904 (1/2) TC4066 SWITCH
IC902 (2/4) μPC324
IC902 (1/4) μPC324
REEL ERROR AMP
SE. 001-16 811-16 REEL BIAS IN
SE. 002-1 812-1 L;REEL SERVO ON IN
904
902
Q906 DTC144EK INVERTER
Q907 DTC144EK LPF SW
SHASSIS
CHASSIS


IC808 NJM4562M CAPSTAN FG DRIVE
IC807 CX20115A WAVE SHAPER
RV801:CAPSTAN FG DUTY
M1001 DRUM MOTOR
DRUM MOTOR C IN
DRUM MOTOR V IN
DRUM MOTOR U IN
DRUM MOTOR W IN
DRUM FG.PG
DRUM FP COM IN
DRUM FG OUT
DRUM PG OUT
GND
DS
CAPSTAN FG (A) IN
CAPSTAN FG (B) IN
CAPSTAN FG 1 OUT
CAPSTAN FG 2 OUT
CAPSTAN FG OUT
DRUM FG OUT
DRUM PG OUT
A-GND
D-GND
IC805 μPC393G2 TAPE END/TOP DETECT
CAPSTAN FG
M1003 CAPSTAN MOTOR (BHF-2802B)
CSX
FP-84 (FLEXIBLE BOARD)
Q715 NJL7141E TAPE TOP SENSOR
Q715 NJL7141E TAPE END SENSOR
L:TAPE TOP OUT
L:TAPE END OUT
TS-74
1-625-361-11
L:TAPE TOP IN
L:TAPE END IN
IC806 TA7733F CASECON MOTOR DRIVE
Q810 2SB1114
Q811 2SB1114
MOTOR DRIVE
DRIVE +9V
CASECON UP IN
CASECON DOWN IN
CASECON MOTOR CCW OUT
CASECON MOTOR CW OUT
M1004 CASSETTE COMPARTMENT MOTOR (DNR-6603A)
M1002 REEL MOTOR (J-119)
FP-122 (FLEXIBLE BOARD)
RS
Q821 2SC1623
Q820 2SC3518
DRIVE +5V REG
DRIVE +9V IN
DRIVE +9V
DRIVE +5V
CHASSIS
S1008 CASSETTE IN
S1009 CASSETTE DOWN
L:CASSETTE IN
L:CASSETTE DOWN IN
L:CASSETTE IN OUT
L:CASSETTE DOWN OUT
RP AFTER REC IN
L:PAL/H:NTSC OUT
PCM RF AREA IN
NTSC: MOUNT PAL: 0
MD-23
1-630-905-11, 12, 13, 14(2)
EVO-9800

I J K L M N O P

MD-23 ; DRUM/CAASTAN/REEL MOTOR DRIVE
TS-74 ; TAPE POP/END SENSOR

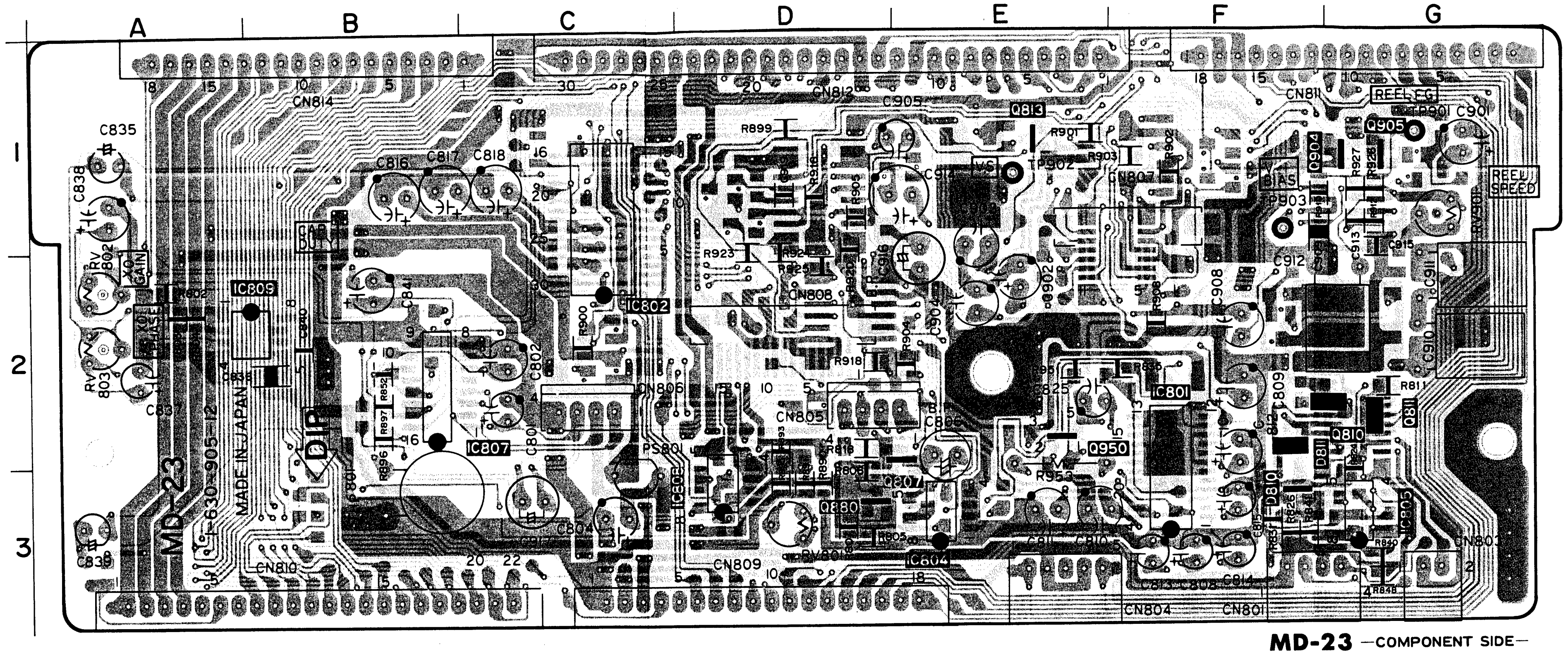
S/N UP TO 10060 (J)
S/N UP TO 10340 (UC)

MD-23(1-630-905-11,12)C

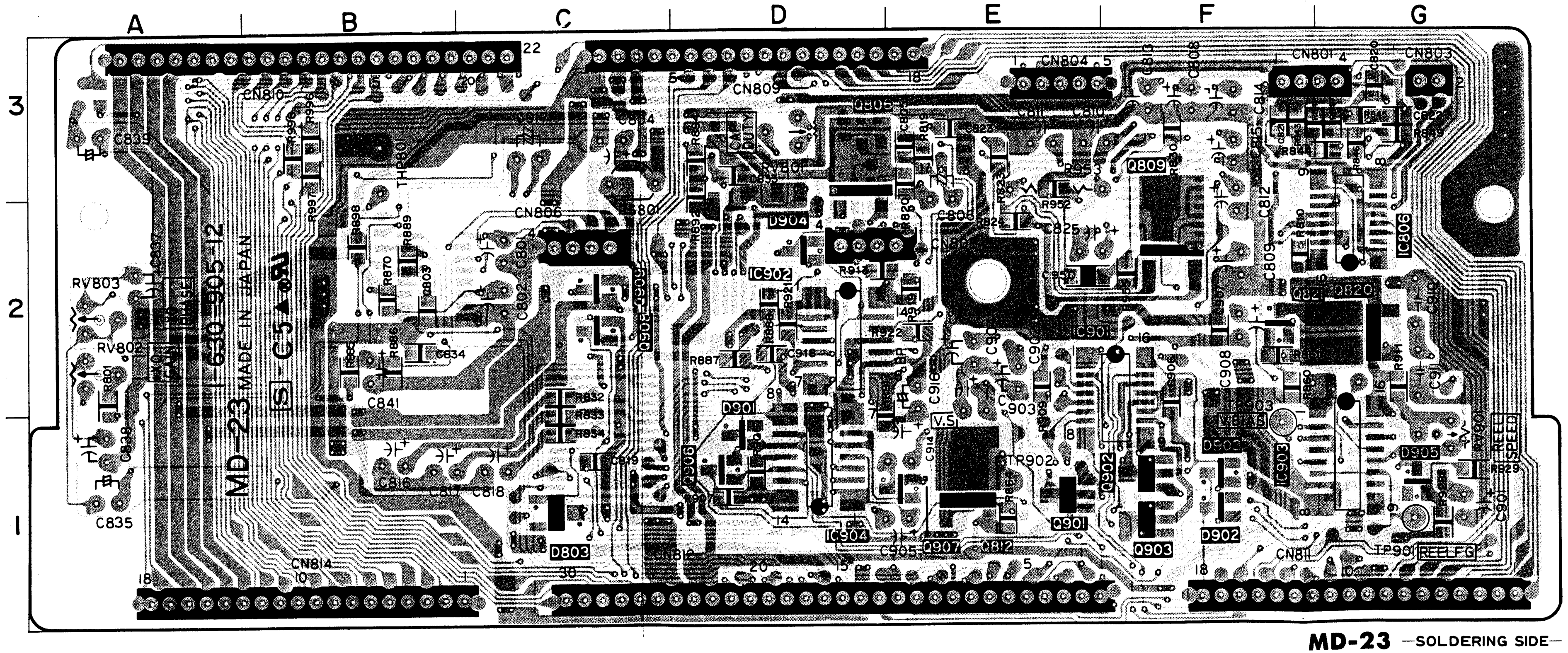
CN801	F-3	PS801	C-3
CN803	G-3		
CN804	E-3	Q807	E-3
CN805	D-2	Q810	G-2
CN806	C-2	Q811	G-2
CN807	F-1	Q813	E-1
CN808	D-2	Q880	D-3
CN809	D-3	Q904	G-1
CN810	B-2	Q905	G-1
CN811	F-1	Q950	E-2
CN812	D-1		
CN814	B-1	RV801	D-3
		RV802	A-2
D810	F-3	RV803	A-2
D811	F-3	RV901	G-1
IC801	F-2	THP801	B-3
IC802	C-1		
IC804	E-3	TP901	G-1
IC805	G-3	TP902	E-1
IC807	B-2	TP903	F-1
IC808	D-3		
IC809	A-2		

MD-23(1-630-905-11,12)S

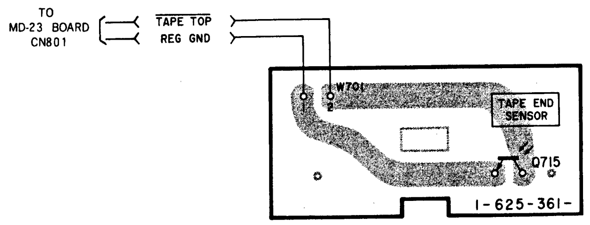
D803	C-1
D901	D-1
D902	F-1
D903	F-1
D904	D-2
D905	G-1
IC806	G-2
IC901	F-2
IC902	D-2
IC903	G-1
IC904	D-1
Q806	D-3
Q809	F-2
Q812	E-1
Q820	G-2
Q821	F-2
Q901	E-1
Q902	F-1
Q903	F-1
Q906	D-1
Q907	E-1
Q908	C-2
Q909	C-2


A
B
C
D
E
F
G
1
2
3
MD-23
1-630-905-12
MADE IN JAPAN
CN814
CN812
CN811
REEL FG
TP901
C901
REEL SPEED
IC809
IC802
IC807
IC801
Q950
Q880
Q810
Q811
CN805
CN808
CN809
CN810
CN804
CN801
CN803
RV802
RV803
RV901
PS801
RV801
C835
C838
C839

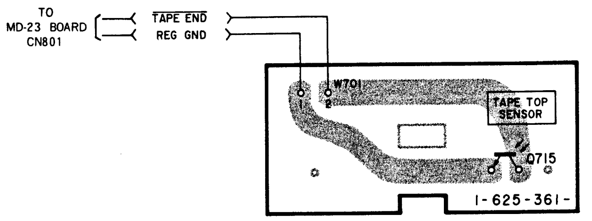
MD-23 —COMPONENT SIDE—
1-630-905-11, 12(1)
EVO-9800


A
B
C
D
E
F
G
3
2
1
MD-23
1-630-905-12
MADE IN JAPAN
CN804
CN801
CN803
CN810
CN809
CN806
CN814
CN812
CN811
TP901
REEL FG
REEL SPEED
RV803
RV802
THP801
IC902
IC904
IC903
IC806
Q809
Q820
Q903
Q901
Q907
Q812
D902
D903
D904
D905
D803
C835
C839

MD-23 —SOLDERING SIDE—
1-630-905-11, 12(1)
EVO-9800


TO
MD-23 BOARD
CN801
TAPE TOP
REG GND
W701
1
2
TAPE END SENSOR
Q715
1-625-361-

TS-74 —SOLDERING SIDE—
1-625-361-11
EVO-9800


TO
MD-23 BOARD
CN801
TAPE END
REG GND
W701
1
2
TAPE TOP SENSOR
Q715
1-625-361-

TS-74 —SOLDERING SIDE—
1-625-361-11
EVO-9800

MD-23; DRUM/CAPSTAN/REEL MOTOR DRIVE
TS-74; TAPE TOP/END SENSOR

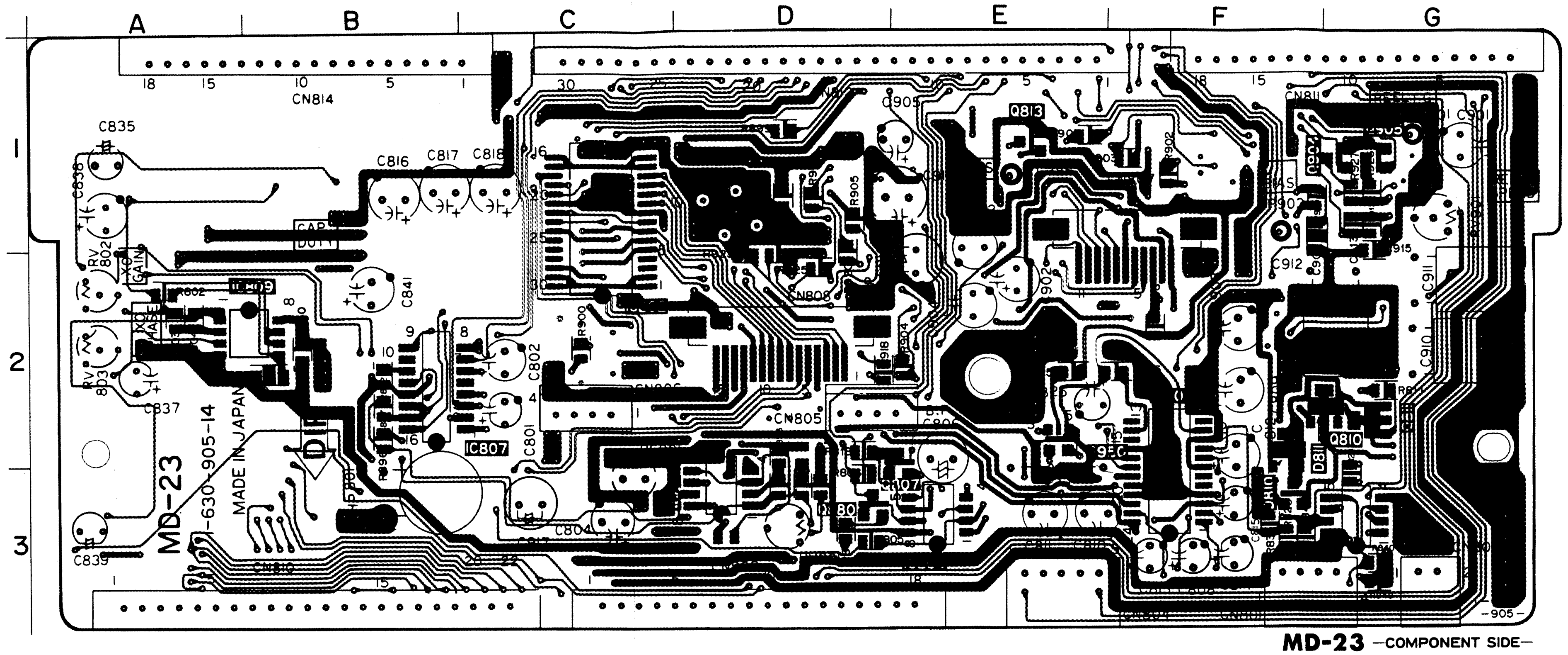
S/N 10061 AND HIGHER (J)
S/N 10341 AND HIGHER (UC)

MD-23(1-630-905-13,14)C

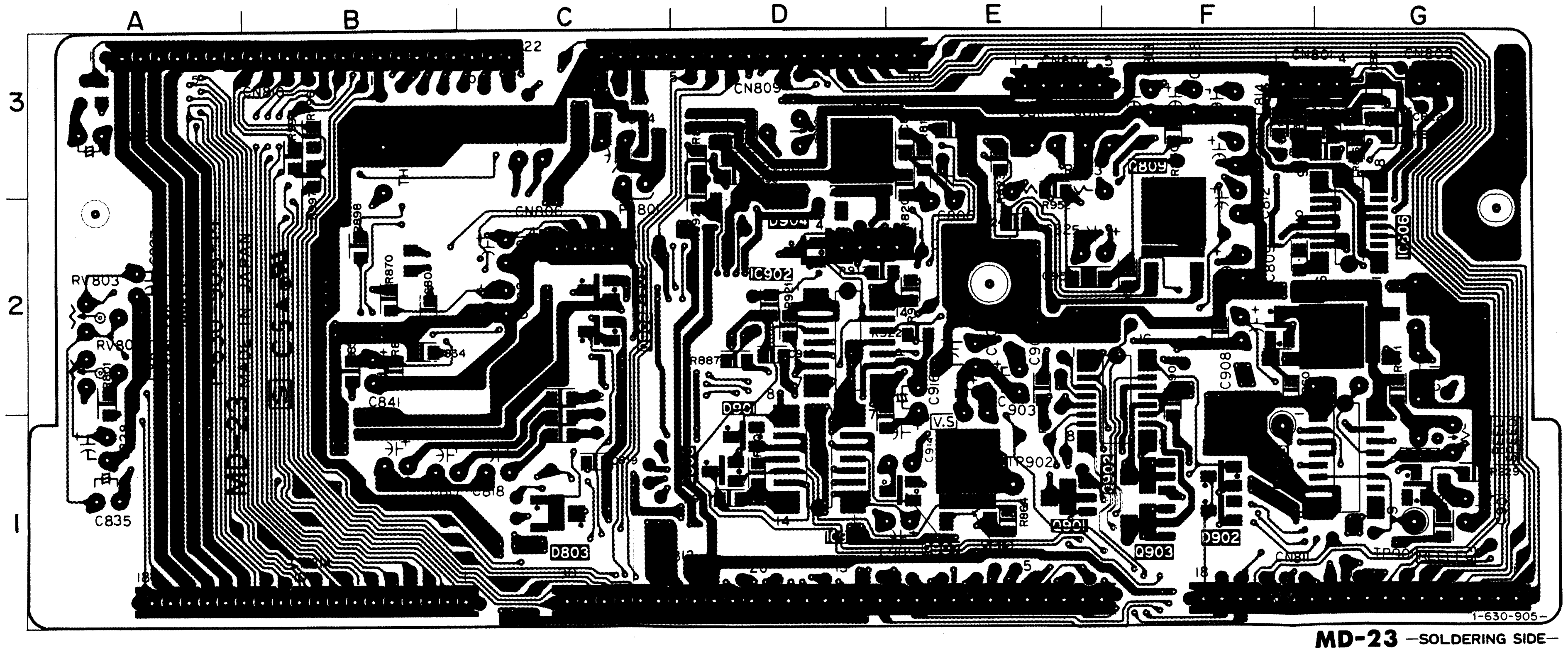
CN801	F-3	PS801	C-3
CN803	G-3		
CN804	E-3	Q807	E-3
CN805	D-2	Q810	G-2
CN806	C-2	Q811	G-2
CN807	F-1	Q813	E-1
CN808	D-2	Q880	D-3
CN809	D-3	Q904	G-1
CN810	B-2	Q905	G-1
CN811	F-1	Q950	E-2
CN812	D-1		
CN814	B-1	RV801	D-3
		RV802	A-2
D810	F-3	RV803	A-2
D811	F-3	RV901	G-1
IC801	F-2	THP801	B-3
IC802	C-1		
IC804	E-3	TP901	G-1
IC805	G-3	TP902	E-1
IC807	B-2	TP903	F-1
IC808	D-3		
IC809	A-2		

MD-23(1-630-905-13, 14)S

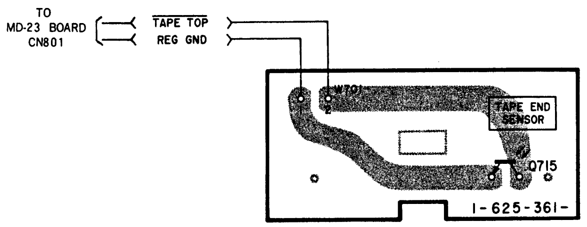
D803	C-1
D901	D-1
D902	F-1
D903	F-1
D904	D-2
D905	G-1
IC806	G-2
IC901	F-2
IC902	D-2
IC903	G-1
IC904	D-1
Q806	D-3
Q809	F-2
Q812	E-1
Q820	G-2
Q821	F-2
Q901	E-1
Q902	F-1
Q903	F-1
Q906	D-1
Q907	E-1
Q908	C-2
Q909	C-2


A
B
C
D
E
F
G
1
2
3
CN814
C835
C836
C816
C817
C818
CAP DUTY
RV802
GAIN
IC809
RV803
C837
C841
IC807
MD-23
1-630-905-14
MADE IN JAPAN
THP801
CN810
C839
C802
C801
CN806
CN808
CN805
C804
Q880
Q905
Q813
R905
C912
Q810
D811
C911
C910
C901
CN811
-905-

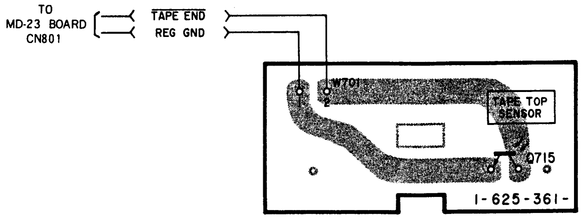
MD-23 —COMPONENT SIDE—
1-630-905-13, 14(1)
EVO-9800


A
B
C
D
E
F
G
3
2
1
22
CN809
CN810
CN806
Q809
IC902
RV803
RV801
C841
C835
MD-23
MADE IN JAPAN
R870
R887
D901
V.S
TP902
R864
D903
D902
C908
C906
D803
CN811
18
1-630-905-

MD-23 —SOLDERING SIDE—
1-630-905-13, 14(1)
EVO-9800


TO
MD-23 BOARD
CN801
TAPE TOP
REG GND
W701
1
2
TAPE END SENSOR
Q715
1-625-361-

TS-74 —SOLDERING SIDE—
1-625-361-11(1)
EVO-9800

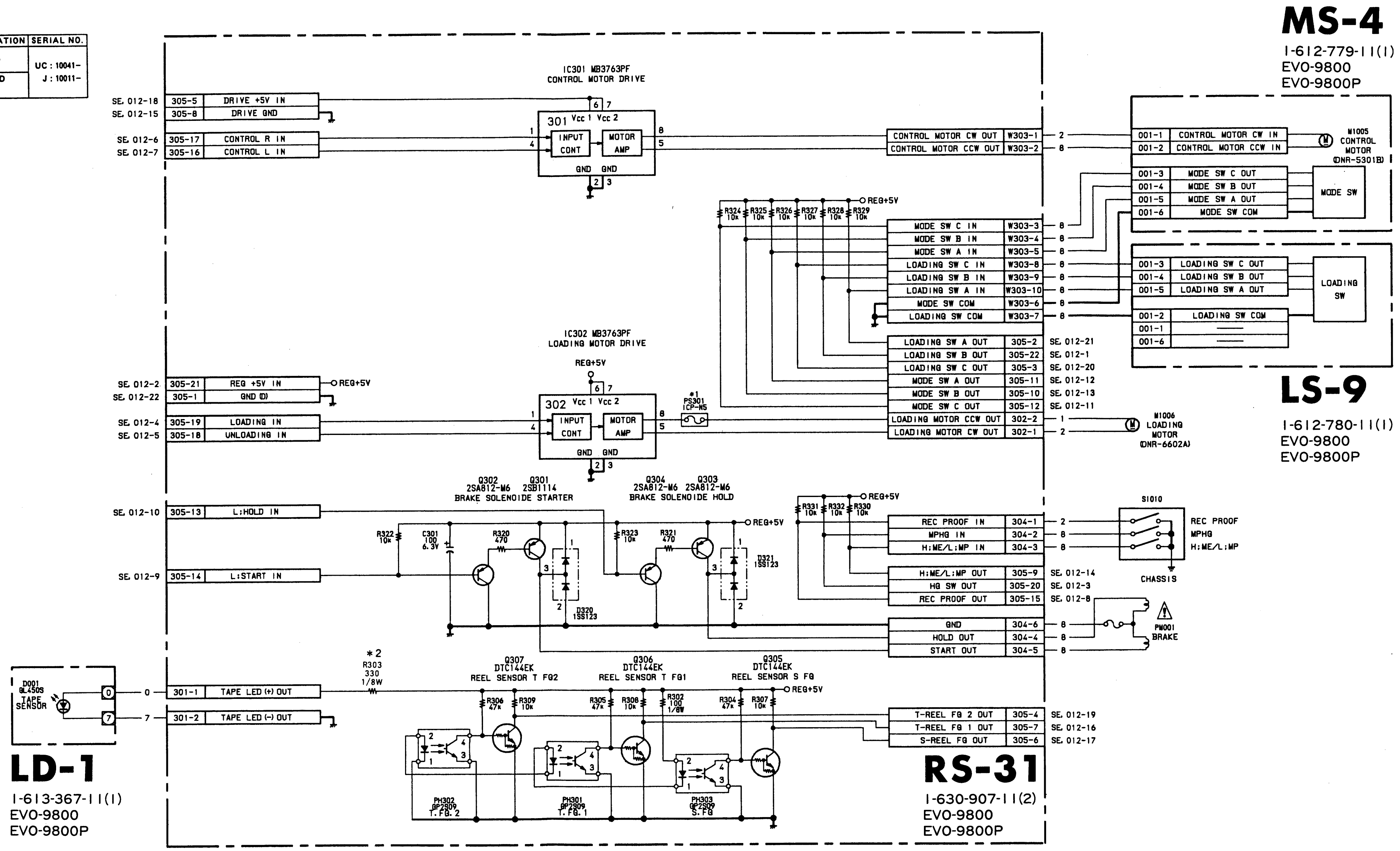

TO
MD-23 BOARD
CN801
TAPE END
REG GND
W701
1
2
TAPE TOP SENSOR
Q715
1-625-361-

TS-74 —SOLDERING SIDE—
1-625-361-11(1)
EVO-9800

RS-31 ; MECHANISM CONTROL
LD-1 ; TAPE SENSOR
LS-9 ; LOADING SWITCH
MS-4 ; MODE SWITCH

NOTE

MARK	CHANGE INFORMATION	SERIAL NO.
*1	PS301 ADDED	UC : 10041- J : 10011-
*2	R303 CHANGED 180 → 330	


MS-4
1-612-779-11(1)
EVO-9800
EVO-9800P
LS-9
1-612-780-11(1)
EVO-9800
EVO-9800P
LD-1
1-613-367-11(1)
EVO-9800
EVO-9800P
RS-31
1-630-907-11(2)
EVO-9800
EVO-9800P
IC301 MB3763PF
CONTROL MOTOR DRIVE
IC302 MB3763PF
LOADING MOTOR DRIVE
301
302
Vcc 1
Vcc 2
INPUT CONT
MOTOR AMP
GND GND
REG+5V
SE. 012-18 305-5 DRIVE +5V IN
SE. 012-15 305-8 DRIVE GND
SE. 012-6 305-17 CONTROL R IN
SE. 012-7 305-16 CONTROL L IN
SE. 012-2 305-21 REG +5V IN
SE. 012-22 305-1 GND (D)
SE. 012-4 305-19 LOADING IN
SE. 012-5 305-18 UNLOADING IN
SE. 012-10 305-13 L:HOLD IN
SE. 012-9 305-14 L:START IN
CONTROL MOTOR CW OUT W303-1
CONTROL MOTOR CCW OUT W303-2
MODE SW C IN W303-3
MODE SW B IN W303-4
MODE SW A IN W303-5
LOADING SW C IN W303-8
LOADING SW B IN W303-9
LOADING SW A IN W303-10
MODE SW COM W303-6
LOADING SW COM W303-7
LOADING SW A OUT 305-2 SE. 012-21
LOADING SW B OUT 305-22 SE. 012-1
LOADING SW C OUT 305-3 SE. 012-20
MODE SW A OUT 305-11 SE. 012-12
MODE SW B OUT 305-10 SE. 012-13
MODE SW C OUT 305-12 SE. 012-11
LOADING MOTOR CCW OUT 302-2
LOADING MOTOR CW OUT 302-1
001-1 CONTROL MOTOR CW IN
001-2 CONTROL MOTOR CCW IN
M1005 CONTROL MOTOR (DNR-5301B)
001-3 MODE SW C OUT
001-4 MODE SW B OUT
001-5 MODE SW A OUT
001-6 MODE SW COM
MODE SW
001-3 LOADING SW C OUT
001-4 LOADING SW B OUT
001-5 LOADING SW A OUT
001-2 LOADING SW COM
001-1
001-6
LOADING SW
M1006 LOADING MOTOR (DNR-6602A)
*1 PS301 ICP-N5
R324 10k R325 10k R326 10k R327 10k R328 10k R329 10k
Q302 2SA812-M6 Q301 2SB1114
BRAKE SOLENOIDE STARTER
Q304 2SA812-M6 Q303 2SA812-M6
BRAKE SOLENOIDE HOLD
R322 10k
C301 100 6.3V
R320 470
R323 10k
R321 470
D320 1SS123
D321 1SS123
R331 10k R332 10k R330 10k
REC PROOF IN 304-1
MPHG IN 304-2
H;ME/L;MP IN 304-3
H;ME/L;MP OUT 305-9 SE. 012-14
HG SW OUT 305-20 SE. 012-3
REC PROOF OUT 305-15 SE. 012-8
GND 304-6
HOLD OUT 304-4
START OUT 304-5
S1010
REC PROOF
MPHG
H;ME/L;MP
CHASSIS
PM001 BRAKE
D001 GL450S TAPE SENSOR
301-1 TAPE LED (+) OUT
301-2 TAPE LED (-) OUT
*2 R303 330 1/8W
Q307 DTC144EK REEL SENSOR T FG2
Q306 DTC144EK REEL SENSOR T FG1
Q305 DTC144EK REEL SENSOR S FG
R306 47k R309 10k R305 47k R308 10k R302 100 1/8W R304 47k R307 10k
PH302 GP2S09 T.FG.2
PH301 GP2S09 T.FG.1
PH303 GP2S09 S.FG
T-REEL FG 2 OUT 305-4 SE. 012-19
T-REEL FG 1 OUT 305-7 SE. 012-16
S-REEL FG OUT 305-6 SE. 012-17

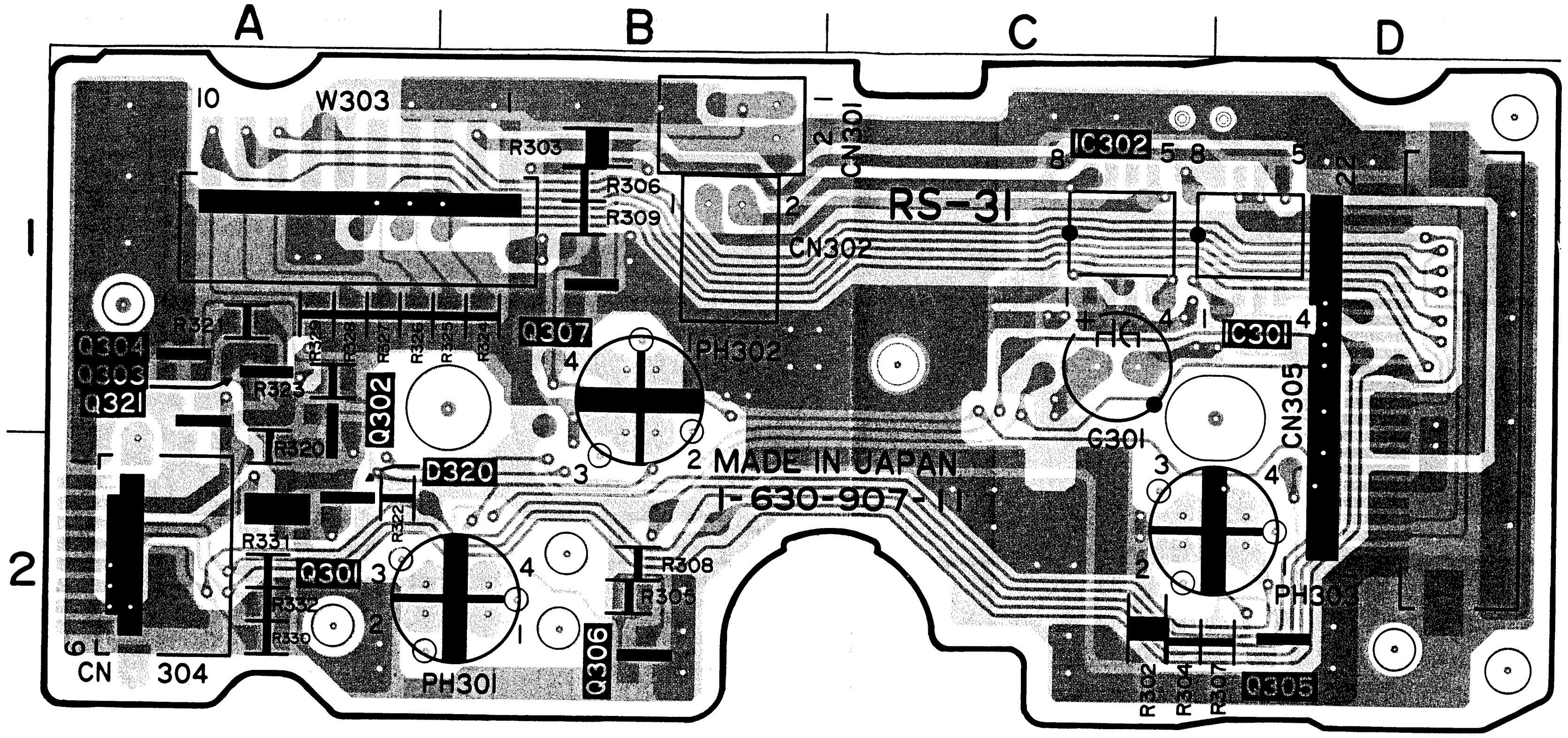
注意1：⚠印のついた部品は安全性を維持するため
に重要な部品です。従って交換する時は必ず
指定の部品を使って下さい。

NOTE:
The ⚠-marked components are critical to sefety.
Replace only with same components as specified.

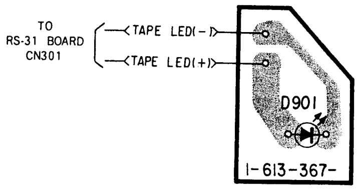
RS-31 ; MECHANISM CONTROL
LD-1 ; TAPE SENSOR

RS-31(1-630-907-11)C

CN301	B-1
CN302	B-1
CN304	A-2
CN305	D-1
D320	A-2
D321	A-1
IC301	D-1
IC302	C-1
PH301	B-2
PH302	B-1
PH303	C-2
Q301	A-2
Q302	A-1
Q303	A-1
Q304	A-1
Q305	D-2
Q306	B-2
Q307	B-1


A
B
C
D
1
2
10
W303
R303
R306
R309
CN301
CN302
RS-31
IC302
IC301
CN305
PH302
PH301
PH303
Q304
Q303
Q321
Q307
Q302
Q301
Q306
Q305
D320
R320
R323
R331
R332
R330
R322
R308
R305
R302
R304
R307
C301
MADE IN JAPAN
1-630-907-11
CN 304

RS-31 —COMPONENT SIDE—
1-630-907-11(1)
EV0-9800

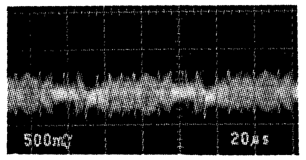

TO
RS-31 BOARD
CN301
TAPE LED(−)
TAPE LED(+)
D901
1-613-367-

LD-1
—SOLDERING SIDE—
1-613-367-11
EV0-9800

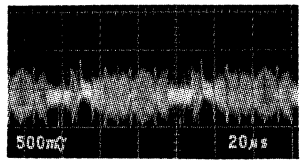
VO-24 (1/2); Y INTERFACE

VO-24(1/2)

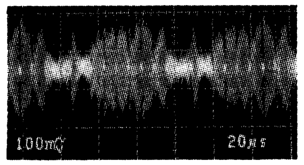
① TP1
REC



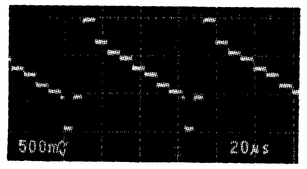
② TP2
REC



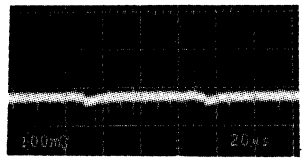
③ TP3
REC



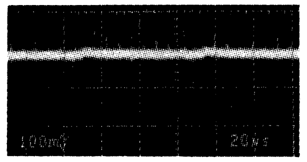
④ TP4
REC



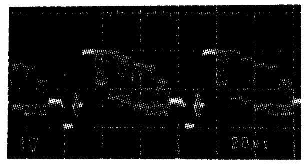
⑤ TP51
REC



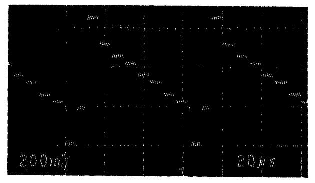
⑥ TP52
REC



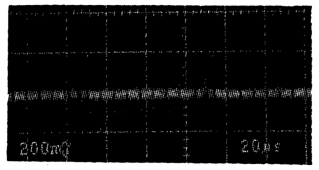
⑦ TP5
REC



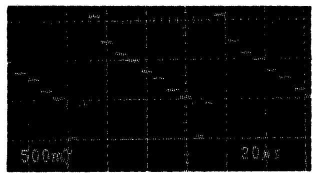
⑧ TP200
REC



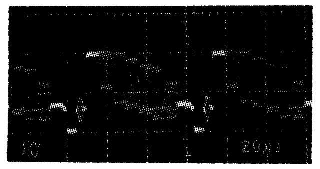
⑨ TP201
REC



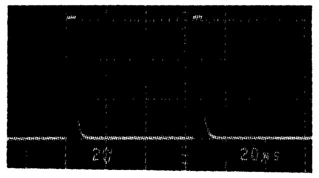
⑩ TP202
REC

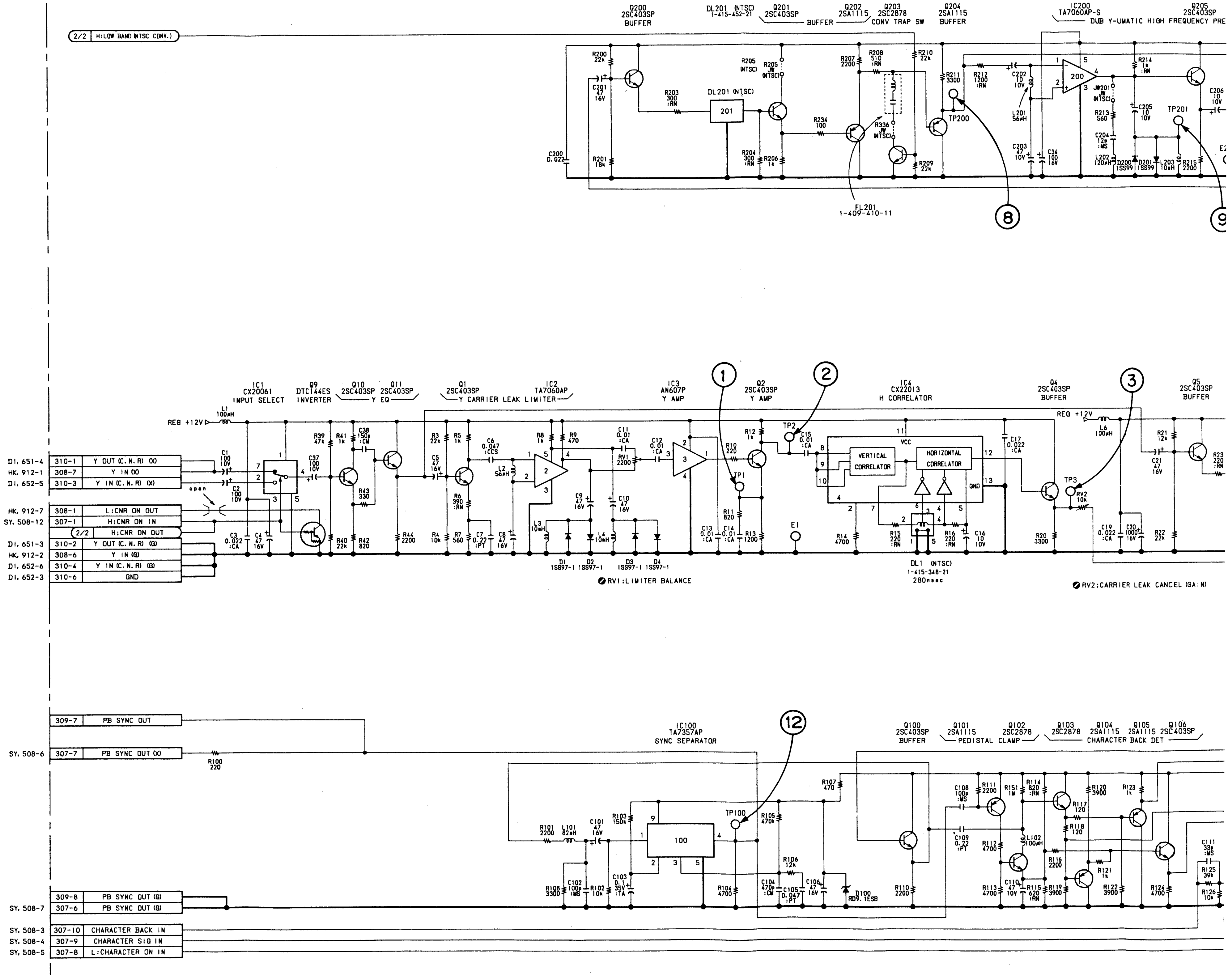


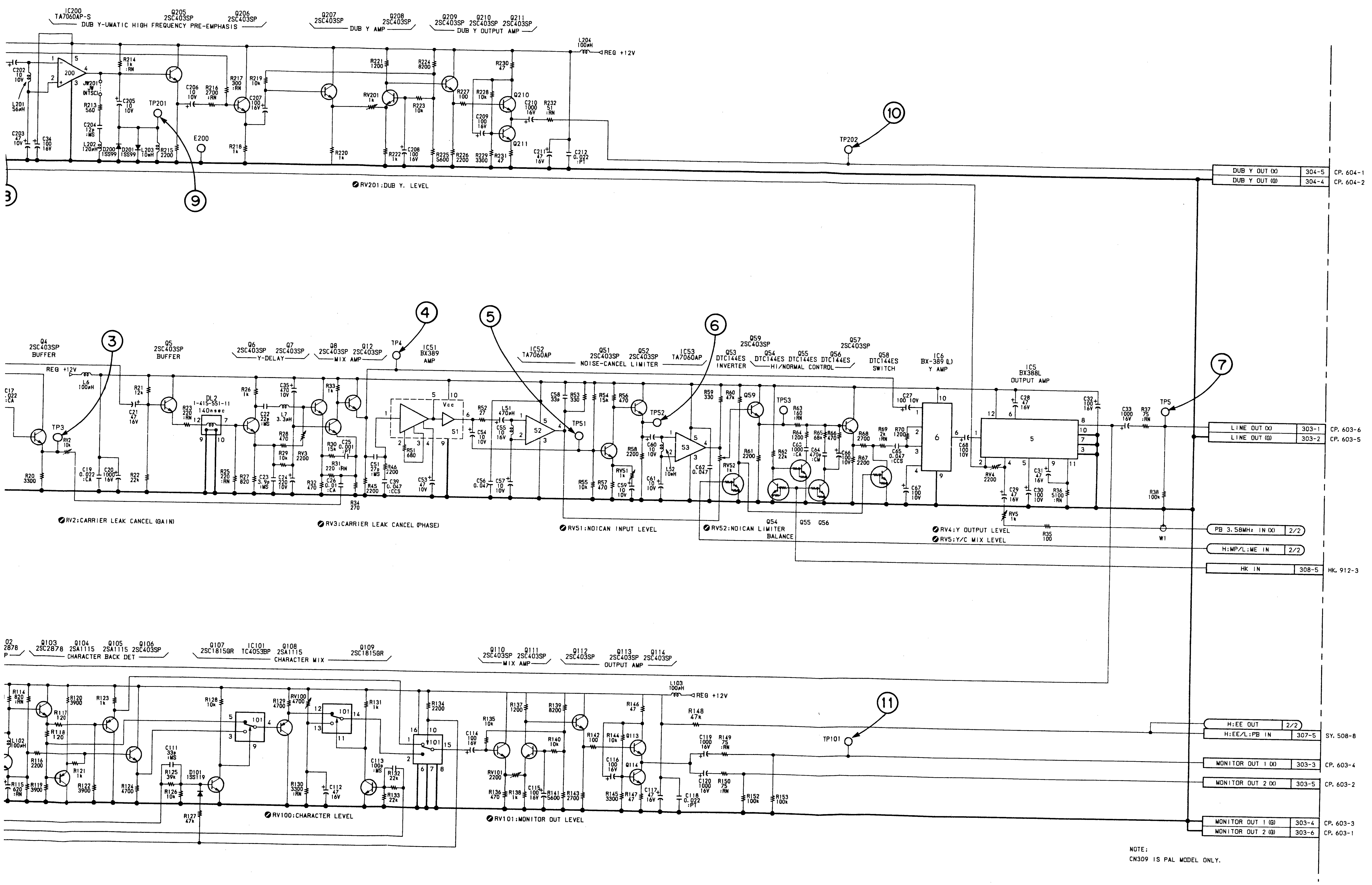
⑪ TP101
REC



⑫ TP100
REC




2/2 H:LOW BAND (NTSC CONV.)
Q200 2SC403SP BUFFER
DL201 (NTSC) 1-415-452-21
Q201 2SC403SP
Q202 2SA1115
Q203 2SC2878
BUFFER
CONV TRAP SW
Q204 2SA1115 BUFFER
IC200 TA7060AP-S
DUB Y-UMATIC HIGH FREQUENCY PRE
Q205 2SC403SP
FL201 1-409-410-11
TP200
TP201
⑧
⑨
IC1 CX20061 INPUT SELECT
Q9 DTC144ES INVERTER
Q10 2SC403SP
Q11 2SC403SP
Y EQ
Q1 2SC403SP
IC2 TA7060AP
Y CARRIER LEAK LIMITER
IC3 AN607P Y AMP
Q2 2SC403SP Y AMP
IC4 CX22013 H CORRELATOR
VERTICAL CORRELATOR
HORIZONTAL CORRELATOR
VCC
GND
Q4 2SC403SP BUFFER
Q5 2SC403SP BUFFER
①
②
③
TP1
TP2
TP3
E1
REG +12V
DL1 (NTSC) 1-415-348-21 280nsec
RV1:LIMITER BALANCE
RV2:CARRIER LEAK CANCEL (GAIN)
D1 1SS97-1
D2 1SS97-1
D3 1SS97-1
D4 1SS97-1
DI. 651-4 310-1 Y OUT (C.N.R) (X)
HK. 912-1 308-7 Y IN (X)
DI. 652-5 310-3 Y IN (C.N.R) (X)
HK. 912-7 308-1 L:CNR ON OUT
SY. 508-12 307-1 H:CNR ON IN
2/2 H:CNR ON OUT
DI. 651-3 310-2 Y OUT (C.N.R) (G)
HK. 912-2 308-6 Y IN (G)
DI. 652-6 310-4 Y IN (C.N.R) (G)
DI. 652-3 310-6 GND
open
309-7 PB SYNC OUT
SY. 508-6 307-7 PB SYNC OUT (X)
R100 220
IC100 TA7357AP SYNC SEPARATOR
⑫
TP100
100
D100 RD9.1ESB
Q100 2SC403SP BUFFER
Q101 2SA1115
Q102 2SC2878
PEDISTAL CLAMP
Q103 2SC2878
Q104 2SA1115
Q105 2SA1115
Q106 2SC403SP
CHARACTER BACK DET
SY. 508-7 309-8 PB SYNC OUT (G)
307-6 PB SYNC OUT (G)
SY. 508-3 307-10 CHARACTER BACK IN
SY. 508-4 307-9 CHARACTER SIG IN
SY. 508-5 307-8 L:CHARACTER ON IN


IC200 TA7060AP-S
Q205 2SC403SP
Q206 2SC403SP
DUB Y-UMATIC HIGH FREQUENCY PRE-EMPHASIS
Q207 2SC403SP
Q208 2SC403SP
DUB Y AMP
Q209 2SC403SP
Q210 2SC403SP
Q211 2SC403SP
DUB Y OUTPUT AMP
L204 100μH
REG +12V
TP201
E200
TP202
RV201:DUB Y. LEVEL
DUB Y OUT (X) 304-5 CP. 604-1
DUB Y OUT (G) 304-4 CP. 604-2
Q4 2SC403SP BUFFER
Q5 2SC403SP BUFFER
Q6 2SC403SP
Q7 2SC403SP
Y-DELAY
Q8 2SC403SP
Q12 2SC403SP
MIX AMP
TP4
IC51 BX389 AMP
IC52 TA7060AP
Q51 2SC403SP
Q52 2SC403SP
NOISE-CANCEL LIMITER
IC53 TA7060AP
Q53 DTC144ES INVERTER
Q59 2SC403SP
Q54 DTC144ES
Q55 DTC144ES
Q56 DTC144ES
HI/NORMAL CONTROL
Q57 2SC403SP
Q58 DTC144ES SWITCH
IC6 BX-389 (L) Y AMP
IC5 BX388L OUTPUT AMP
REG +12V
TP3
DL2 1-415-551-11 140nsec
TP51
TP52
TP53
TP5
RV2:CARRIER LEAK CANCEL (GAIN)
RV3:CARRIER LEAK CANCEL (PHASE)
RV51:NOICAN INPUT LEVEL
RV52:NOICAN LIMITER BALANCE
RV4:Y OUTPUT LEVEL
RV5:Y/C MIX LEVEL
W1
LINE OUT (X) 303-1 CP. 603-6
LINE OUT (G) 303-2 CP. 603-5
PB 3.58MHz IN (X) 2/2
H:MP/L:ME IN 2/2
HK IN 308-5 HK. 912-3
Q103 2SC2878
Q104 2SA1115
Q105 2SA1115
Q106 2SC403SP
CHARACTER BACK DET
Q107 2SC1815GR
IC101 TC4053BP
Q108 2SA1115
CHARACTER MIX
Q109 2SC1815GR
Q110 2SC403SP
Q111 2SC403SP
MIX AMP
Q112 2SC403SP
Q113 2SC403SP
Q114 2SC403SP
OUTPUT AMP
L103 100μH
REG +12V
TP101
D101 1SS119
RV100:CHARACTER LEVEL
RV101:MONITOR OUT LEVEL
H:EE OUT 2/2
H:EE/L:PB IN 307-5 SY. 508-8
MONITOR OUT 1 (X) 303-3 CP. 603-4
MONITOR OUT 2 (X) 303-5 CP. 603-2
MONITOR OUT 1 (G) 303-4 CP. 603-3
MONITOR OUT 2 (G) 303-6 CP. 603-1
③
④
⑤
⑥
⑦
⑨
⑩
⑪

NOTE:
CN309 IS PAL MODEL ONLY.

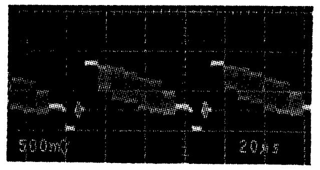
VO-24(1/2)

1-631-797-11, 12(1)
EVO-9800

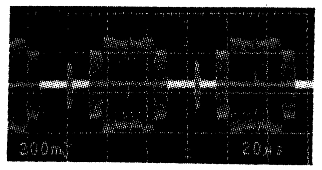
VO-24 (2/2) ; CHROMA INTERFACE

VO-24(2/2)

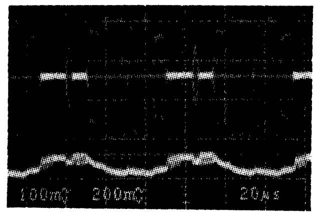
① TP400
REC



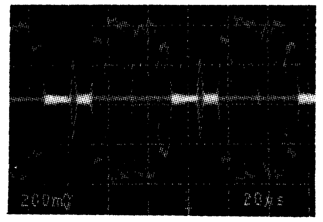
② TP409
REC



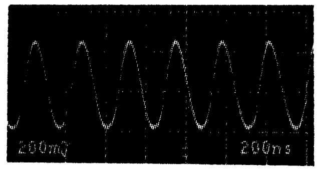
③ TP407
TP408
PB



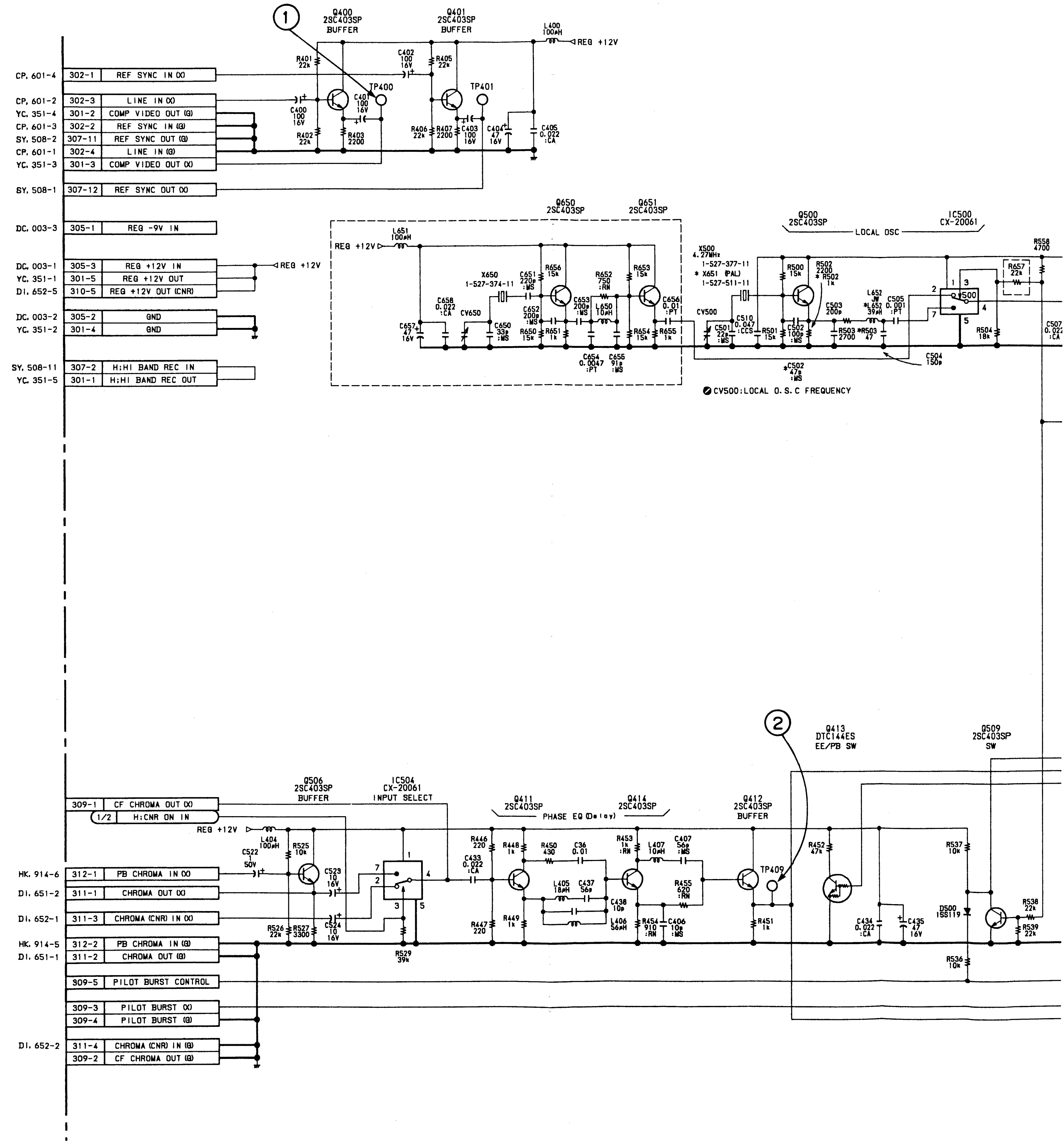
④ TP501
PB

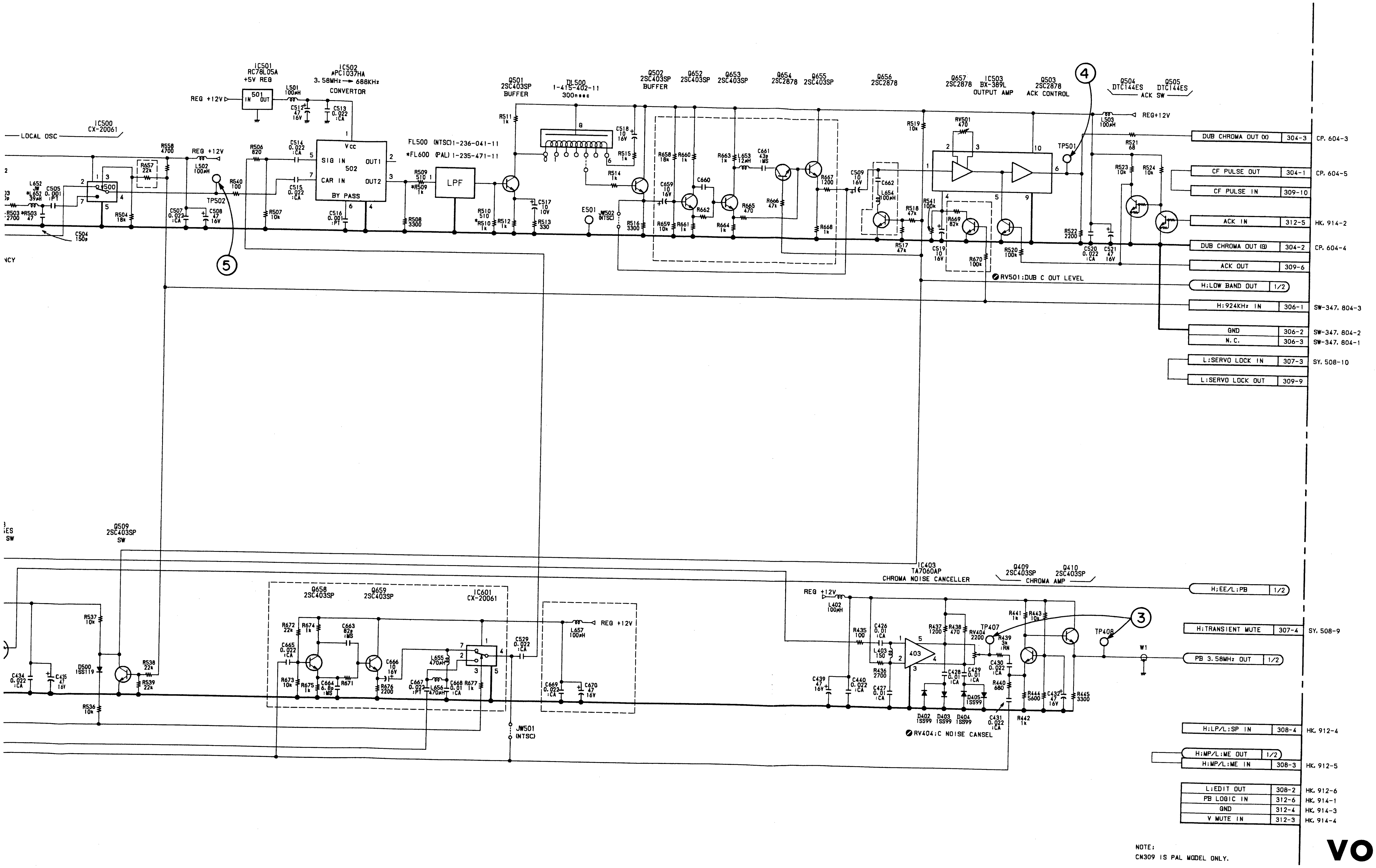


⑤ TP502
PB



4.27MHz


CP. 601-4
302-1 REF SYNC IN (X)
CP. 601-2
302-3 LINE IN (X)
YC. 351-4
301-2 COMP VIDEO OUT (G)
CP. 601-3
302-2 REF SYNC IN (G)
SY. 508-2
307-11 REF SYNC OUT (G)
CP. 601-1
302-4 LINE IN (G)
YC. 351-3
301-3 COMP VIDEO OUT (X)
SY. 508-1
307-12 REF SYNC OUT (X)
DC. 003-3
305-1 REG -9V IN
DC. 003-1
305-3 REG +12V IN
YC. 351-1
301-5 REG +12V OUT
DI. 652-5
310-5 REG +12V OUT (CNR)
REG +12V
DC. 003-2
305-2 GND
YC. 351-2
301-4 GND
SY. 508-11
307-2 H:HI BAND REC IN
YC. 351-5
301-1 H:HI BAND REC OUT
Q400 2SC403SP BUFFER
Q401 2SC403SP BUFFER
TP400
TP401
L400 100µH
REG +12V
Q650 2SC403SP
Q651 2SC403SP
Q500 2SC403SP
LOCAL OSC
IC500 CX-20061
X650
X500 4.27MHz
1-527-377-11
* X651 (PAL)
1-527-511-11
1-527-374-11
CV650
CV500
L651 100µH
REG +12V
CV500:LOCAL O.S.C FREQUENCY
309-1 CF CHROMA OUT (X)
1/2 H:CNR ON IN
REG +12V
HK. 914-6
312-1 PB CHROMA IN (X)
DI. 651-2
311-1 CHROMA OUT (X)
DI. 652-1
311-3 CHROMA (CNR) IN (X)
HK. 914-5
312-2 PB CHROMA IN (G)
DI. 651-1
311-2 CHROMA OUT (G)
309-5 PILOT BURST CONTROL
309-3 PILOT BURST (X)
309-4 PILOT BURST (G)
DI. 652-2
311-4 CHROMA (CNR) IN (G)
309-2 CF CHROMA OUT (G)
Q506 2SC403SP BUFFER
IC504 CX-20061 INPUT SELECT
Q411 2SC403SP
Q414 2SC403SP
PHASE EQ (Delay)
Q412 2SC403SP BUFFER
TP409
Q413 DTC144ES EE/PB SW
Q509 2SC403SP SW
D500 1SS119
①
②


IC500 CX-20061
LOCAL OSC
IC501 RC78L05A +5V REG
IC502 *PC1037HA 3.58MHz → 688KHz CONVERTOR
REG +12V
SIG IN
CAR IN
OUT1
OUT2
BY PASS
LPF
FL500 (NTSC) 1-236-041-11
*FL600 (PAL) 1-235-471-11
TP502
Q501 2SC403SP BUFFER
DL500 1-415-402-11 300nsec
E501
JW502 (NTSC)
Q502 2SC403SP BUFFER
Q652 2SC403SP
Q653 2SC403SP
Q654 2SC2878
Q655 2SC403SP
Q656 2SC2878
Q657 2SC2878
IC503 BX-389L OUTPUT AMP
Q503 2SC2878 ACK CONTROL
Q504 DTC144ES
Q505 DTC144ES
ACK SW
RV501
TP501
RV501:DUB C OUT LEVEL
REG+12V
DUB CHROMA OUT (X) 304-3 CP, 604-3
CF PULSE OUT 304-1 CP, 604-5
CF PULSE IN 309-10
ACK IN 312-5 HK, 914-2
DUB CHROMA OUT (B) 304-2 CP, 604-4
ACK OUT 309-6
H:LOW BAND OUT 1/2
H:924KHz IN 306-1 SW-347, 804-3
GND 306-2 SW-347, 804-2
N.C. 306-3 SW-347, 804-1
L:SERVO LOCK IN 307-3 SY, 508-10
L:SERVO LOCK OUT 309-9
Q509 2SC403SP SW
D500 1SS119
Q658 2SC403SP
Q659 2SC403SP
IC601 CX-20061
REG +12V
JW501 (NTSC)
IC403 TA7060AP CHROMA NOISE CANCELLER
Q409 2SC403SP
Q410 2SC403SP
CHROMA AMP
TP407
TP408
RV404
W1
RV404:C NOISE CANSEL
H:EE/L:PB 1/2
H:TRANSIENT MUTE 307-4 SY, 508-9
PB 3.58MHz OUT 1/2
H:LP/L:SP IN 308-4 HK, 912-4
H:MP/L:ME OUT 1/2
H:MP/L:ME IN 308-3 HK, 912-5
L:EDIT OUT 308-2 HK, 912-6
PB LOGIC IN 312-6 HK, 914-1
GND 312-4 HK, 914-3
V MUTE IN 312-3 HK, 914-4
③
④
⑤

NOTE:
CN309 IS PAL MODEL ONLY.

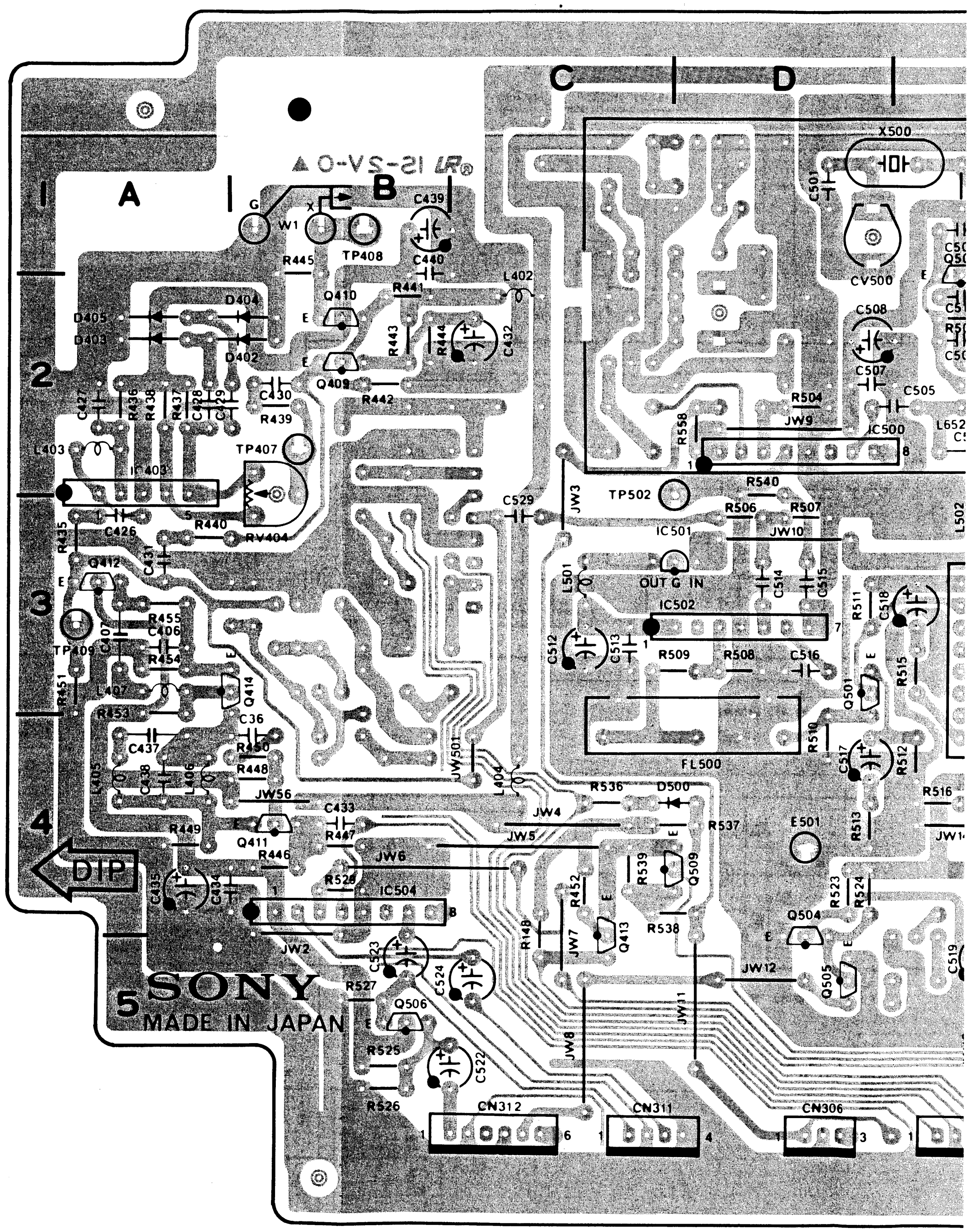
VO-24(2/2)

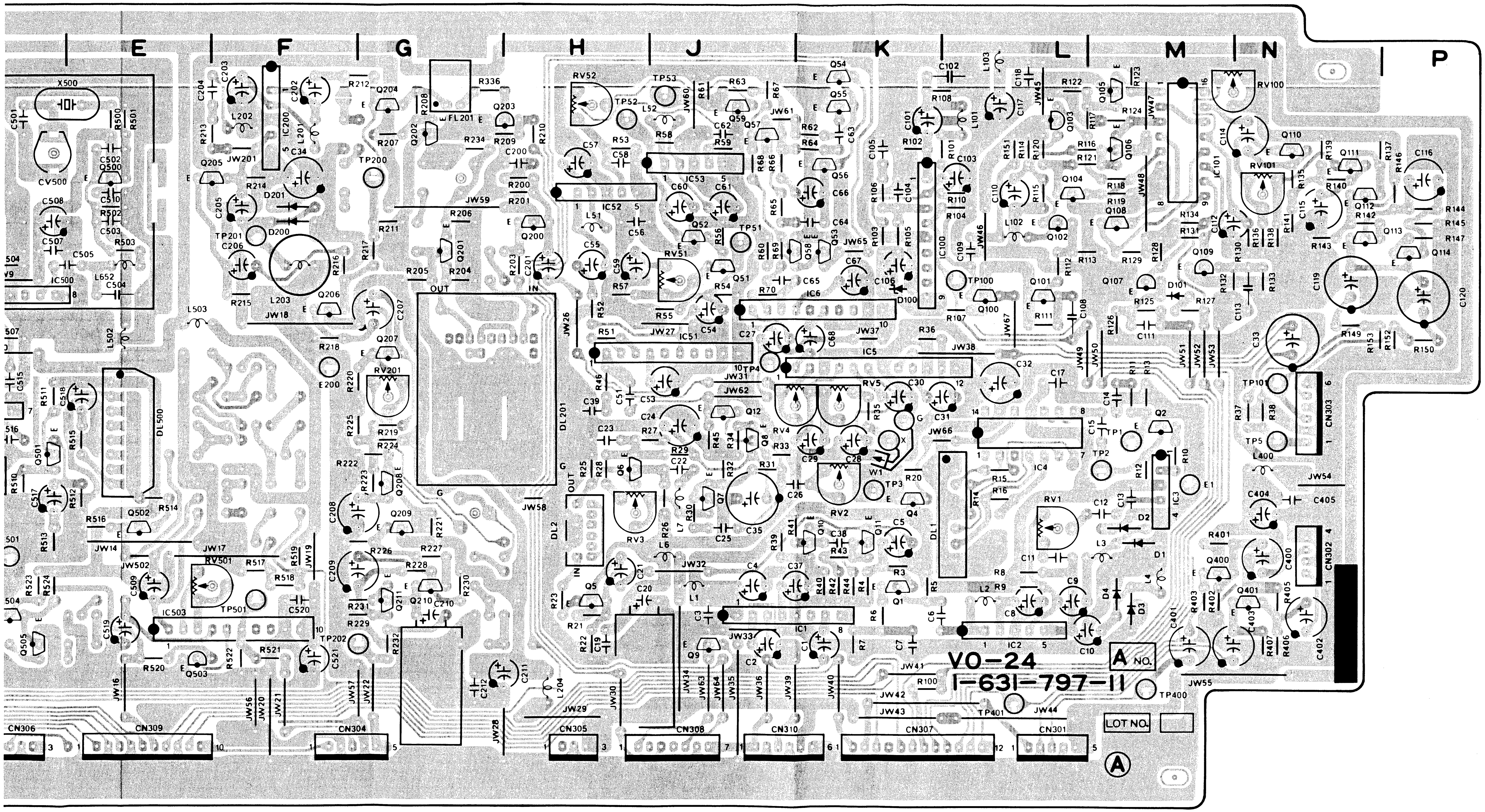
1-631-797-11, 12(1)
EVO-9800

VO-24 ; Y/C INTERFACE

VO-24(1-631-797-11,12) C

CN301	L-5	Q1	K-4	Q503	E-5	
CN302	N-4	Q2	M-3	Q504	D-4	
CN303	N-3	Q4	K-4	Q505	D-5	
CN304	F-5	Q5	H-4	Q506	B-5	
CN305	H-5	Q6	H-4	Q509	D-4	
CN306	D-5	Q7	J-4			
CN307	K-5	Q8	J-3	RV1	L-4	
CN308	J-5	Q9	J-5	RV2	K-4	
CN310	J-5	Q10	K-4	RV3	H-4	
CN311	C-5	Q11	K-4	RV4	J-3	
CN312	C-5	Q12	J-3	RV5	K-3	
		Q51	J-2	RV51	J-2	
CV500	D-2	Q52	J-2	RV52	H-1	
		Q53	K-2	RV100	N-1	
D1	M-4	Q54	K-1	RV101	N-1	
D2	M-4	Q55	K-1	RV201	G-3	
D3	M-4	Q56	K-1	RV404	B-3	
D4	M-4	Q57	J-1	RV501	F-4	
D100	K-2	Q58	K-2			
D101	M-2	Q59	J-1	TP1	M-3	S
D200	F-2	Q100	L-2	TP2	M-3	S
D201	F-2	Q101	L-2	TP3	K-4	S
D402	B-2	Q102	L-2	TP4	J-3	S
D403	A-2	Q103	L-1	TP5	N-3	S
D404	B-2	Q104	L-2	TP51	J-2	S
D405	A-2	Q105	M-1	TP52	H-1	S
D500	D-4	Q106	M-1	TP53	J-1	S
		Q107	M-2	TP100	L-2	S
DL1	K-4	Q108	M-2	TP101	N-3	S
DL2	H-4	Q109	M-2	TP200	G-1	S
DL201	H-3	Q110	N-1	TP201	F-2	S
DL500	E-3	Q111	N-1	TP202	F-5	S
		Q112	N-2	TP400	M-5	S
E1	M-4	Q113	P-2	TP401	L-5	S
E200	F-3	Q114	P-2	TP407	B-2	S
E501	D-4	Q200	H-2	TP408	B-1	S
		Q201	G-2	TP409	A-3	S
FL201	G-1	Q202	G-1	TP501	F-4	S
FL500	D-4	Q203	G-1	TP502	C-2	S
		Q204	G-1			
IC1	K-5	Q205	E-1	X500	E-1	
IC2	L-5	Q206	F-2			
IC3	M-4	Q207	G-3			
IC4	L-3	Q208	G-4			
IC5	K-3	Q209	G-4			
IC6	K-2	Q210	G-4			
IC51	J-3	Q211	G-4			
IC52	H-2	Q400	M-4			
IC53	J-2	Q401	N-4			
IC100	L-2	Q409	B-2			
IC101	M-1	Q410	B-2			
IC200	F-1	Q411	B-4			
IC403	A-2	Q412	A-3			
IC500	D-2	Q413	C-5			
IC501	D-3	Q414	B-3			
IC502	D-3	Q500	E-1			
IC503	E-4	Q501	D-3			
IC504	B-4	Q502	E-4			


A
B
C
D
1
2
3
4
5
▲ O-VS-21 LR®
X500
CV500
C439
C440
TP408
R445
R441
L402
Q410
D404
D405
D403
D402
Q409
R443
R444
C432
R442
C430
R439
C427
R436
R438
R437
C428
C429
TP407
L403
IC403
C426
R440
RV404
R435
Q412
C431
TP409
R455
C406
R454
Q414
R451
R453
C36
C437
R450
R448
L405
C438
L406
JW56
R449
Q411
C433
R447
R446
JW6
R528
IC504
C435
C434
JW2
C523
C524
R527
Q506
R525
C522
R526
CN312
CN311
CN306
JW8
JW11
R148
JW7
R452
Q413
R539
Q509
R538
JW4
JW5
R536
D500
R537
E501
FL500
L404
JW501
C529
JW3
TP502
R540
R506
R507
IC501
JW10
OUT G IN
L501
C514
C515
IC502
C512
C513
R509
R508
C516
R511
C518
R515
Q501
R510
C517
R512
R513
R516
R523
R524
Q504
Q505
JW12
C519
C501
C508
C507
C505
R504
JW9
R558
IC500
L652
L502
DIP
SONY
MADE IN JAPAN

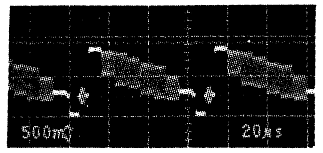

E
F
G
H
J
K
L
M
N
P
VO-24
1-631-797-11
A NO.
LOT NO.
A

VO-24 —COMPONENT SIDE—
1-631-797-11, 12(1)
EVO-9800

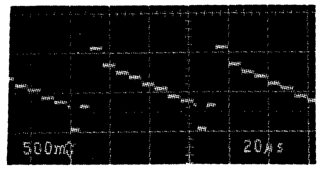
YC-39 ; Y/C SEPARATOR

YC-39

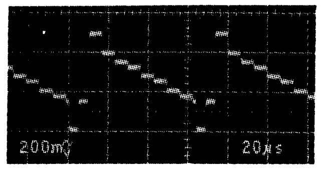
① TP3
REC



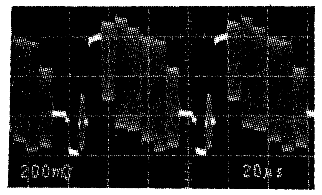
② TP4
REC



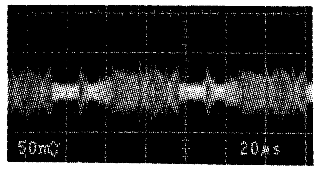
③ TP10
REC



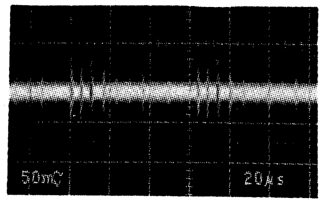
④ TP5
REC



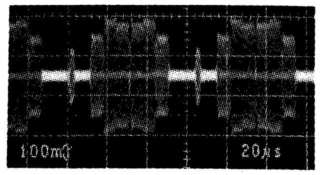
⑤ TP6
REC

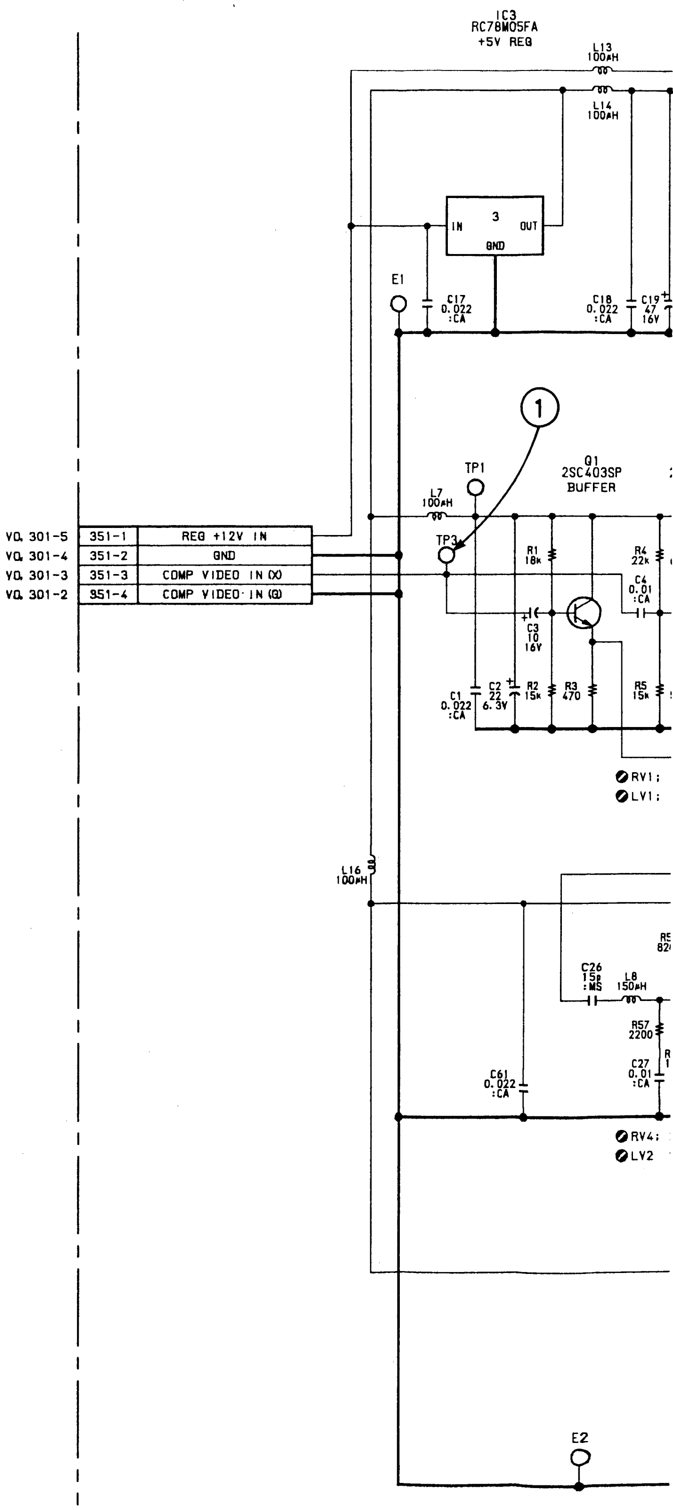


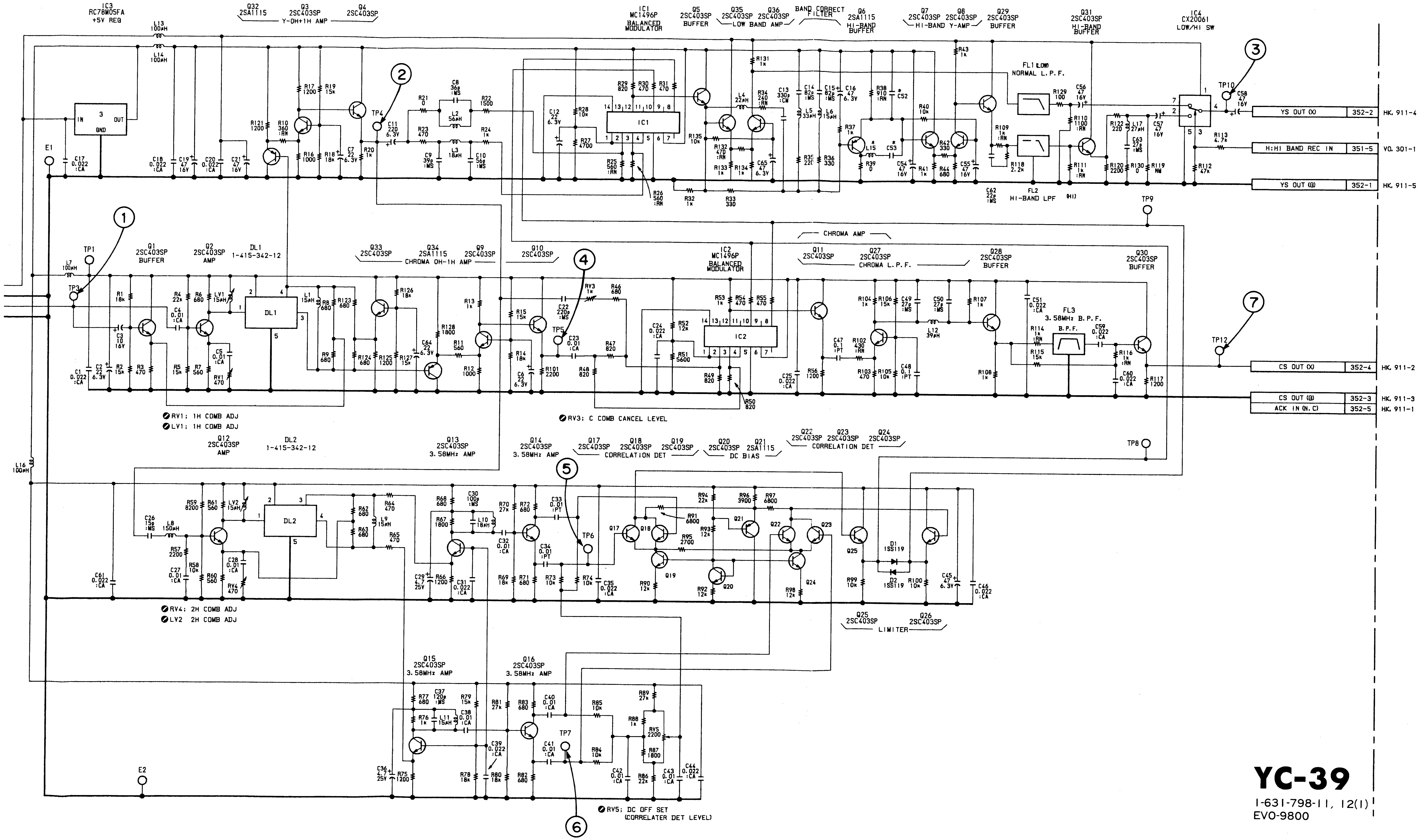
⑥ TP7
REC



⑦ TP12
REC




IC3
RC78M05FA
+5V REG
L13
100μH
L14
100μH
3
IN
OUT
GND
E1
C17
0.022
:CA
C18
0.022
:CA
C19
47
16V
①
TP1
Q1
2SC403SP
BUFFER
L7
100μH
TP3
VQ 301-5
351-1
REG +12V IN
VQ 301-4
351-2
GND
VQ 301-3
351-3
COMP VIDEO IN (X)
VQ 301-2
351-4
COMP VIDEO IN (G)
R1
18k
R4
22k
C4
0.01
:CA
C3
10
16V
C1
0.022
:CA
C2
22
6.3V
R2
15k
R3
470
R5
15k
RV1;
LY1;
L16
100μH
C26
15p
:MS
L8
150μH
R57
2200
C27
0.01
:CA
C61
0.022
:CA
RV4;
LY2
E2


IC3 RC78M05FA +5V REG
Q32 2SA1115
Q3 2SC403SP
Q4 2SC403SP
Y-0H+1H AMP
IC1 MC1496P BALANCED MODULATOR
Q5 2SC403SP BUFFER
Q35 2SC403SP
Q36 2SC403SP
LOW BAND AMP
BAND CORRECT FILTER
Q6 2SA1115 HI-BAND BUFFER
Q7 2SC403SP
Q8 2SC403SP
HI-BAND Y-AMP
Q29 2SC403SP BUFFER
Q31 2SC403SP HI-BAND BUFFER
IC4 CX20061 LOW/HI SW
FL1 LOW NORMAL L.P.F.
FL2 HI-BAND LPF
YS OUT (X) 352-2 HK. 911-4
H:HI BAND REC IN 351-5 VQ. 301-1
YS OUT (G) 352-1 HK. 911-5
Q1 2SC403SP BUFFER
Q2 2SC403SP AMP
DL1 1-415-342-12
Q33 2SC403SP
Q34 2SA1115
Q9 2SC403SP
CHROMA 0H-1H AMP
Q10 2SC403SP
IC2 MC1496P BALANCED MODULATOR
CHROMA AMP
Q11 2SC403SP
Q27 2SC403SP CHROMA L.P.F.
Q28 2SC403SP BUFFER
Q30 2SC403SP BUFFER
FL3 3.58MHz B.P.F.
CS OUT (X) 352-4 HK. 911-2
CS OUT (G) 352-3 HK. 911-3
ACK IN (N.C) 352-5 HK. 911-1
RV1: 1H COMB ADJ
LV1: 1H COMB ADJ
RV3: C COMB CANCEL LEVEL
Q12 2SC403SP AMP
DL2 1-415-342-12
Q13 2SC403SP 3.58MHz AMP
Q14 2SC403SP 3.58MHz AMP
Q17 2SC403SP
Q18 2SC403SP
Q19 2SC403SP
CORRELATION DET
Q20 2SC403SP
Q21 2SA1115
DC BIAS
Q22 2SC403SP
Q23 2SC403SP
Q24 2SC403SP
CORRELATION DET
Q25 2SC403SP
Q26 2SC403SP
LIMITER
D1 1SS119
D2 1SS119
RV4: 2H COMB ADJ
LV2: 2H COMB ADJ
Q15 2SC403SP 3.58MHz AMP
Q16 2SC403SP 3.58MHz AMP
RV5: DC OFF SET (CORRELATER DET LEVEL)
TP1 TP2 TP3 TP4 TP5 TP6 TP7 TP8 TP9 TP10 TP12
E1 E2
① ② ③ ④ ⑤ ⑥ ⑦

YC-39

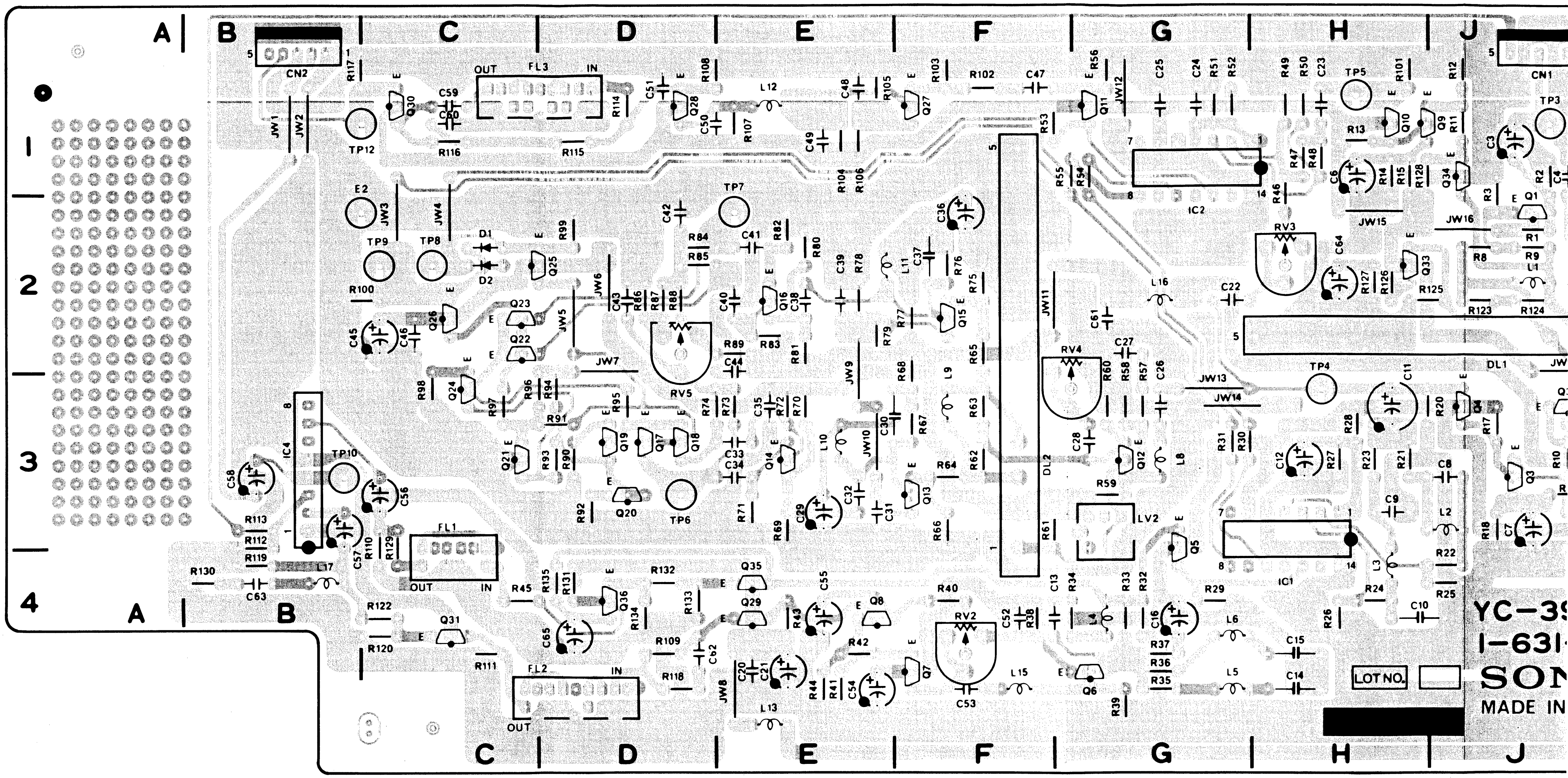
1-631-798-11, 12(1)
EVO-9800

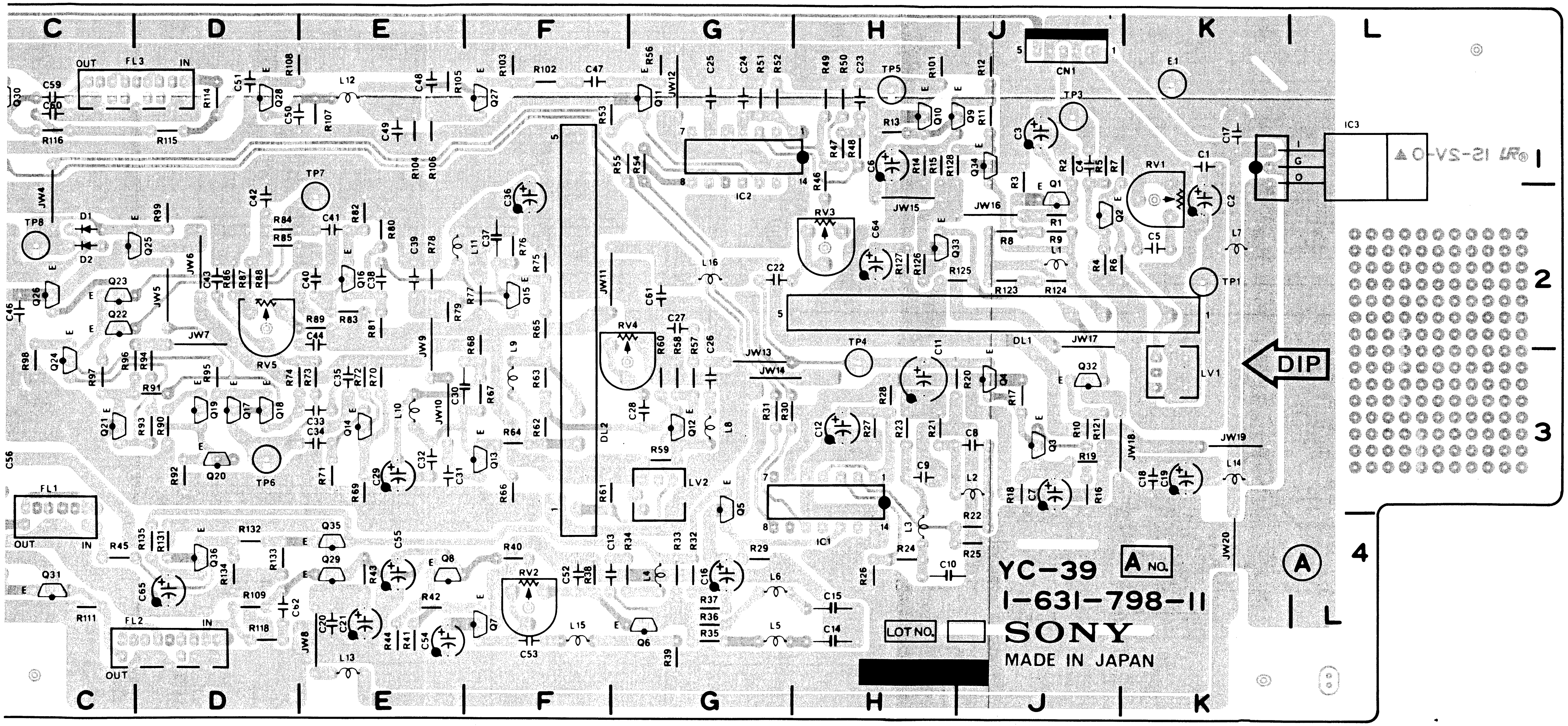
* mark is not mounted.

YC-39 ; Y/C SEPARATOR

YC-39(1-631-798-11,12) C

CN351	J-1
CN532	B-1
D1	C-2
D2	C-2
DL1	J-2
DL2	F-3
E1	K-1
E2	B-2
FL1	C-3
FL2	C-4
FL3	C-1
IC1	H-4
IC2	G-2
IC3	L-1
IC4	B-3
LV1	K-3
LV2	G-3
Q1	J-2
Q2	J-2
Q3	J-3
Q4	J-3
Q5	G-3
Q6	G-4
Q7	F-4
Q8	E-4
Q9	J-1
Q10	H-1
Q11	G-1
Q12	G-3
Q13	F-3
Q14	E-3
Q15	F-2
Q16	E-2
Q17	D-3
Q18	D-3
Q19	D-3
Q20	D-3
Q21	C-3
Q22	C-2
Q23	C-2
Q24	C-3
Q25	D-2
Q26	C-2
Q27	F-1
Q28	D-1
Q29	E-4
Q30	C-1
Q31	C-4
Q32	J-3
Q33	H-2
Q34	J-1
Q35	E-4
Q36	D-4
RV1	K-1
RV3	H-2
RV4	F-2
RV5	D-3
TP1	K-2
TP3	J-1
TP4	H-3
TP5	H-1
TP6	D-3
TP7	E-2
TP8	C-2
TP9	C-2
TP10	B-3
TP12	B-1

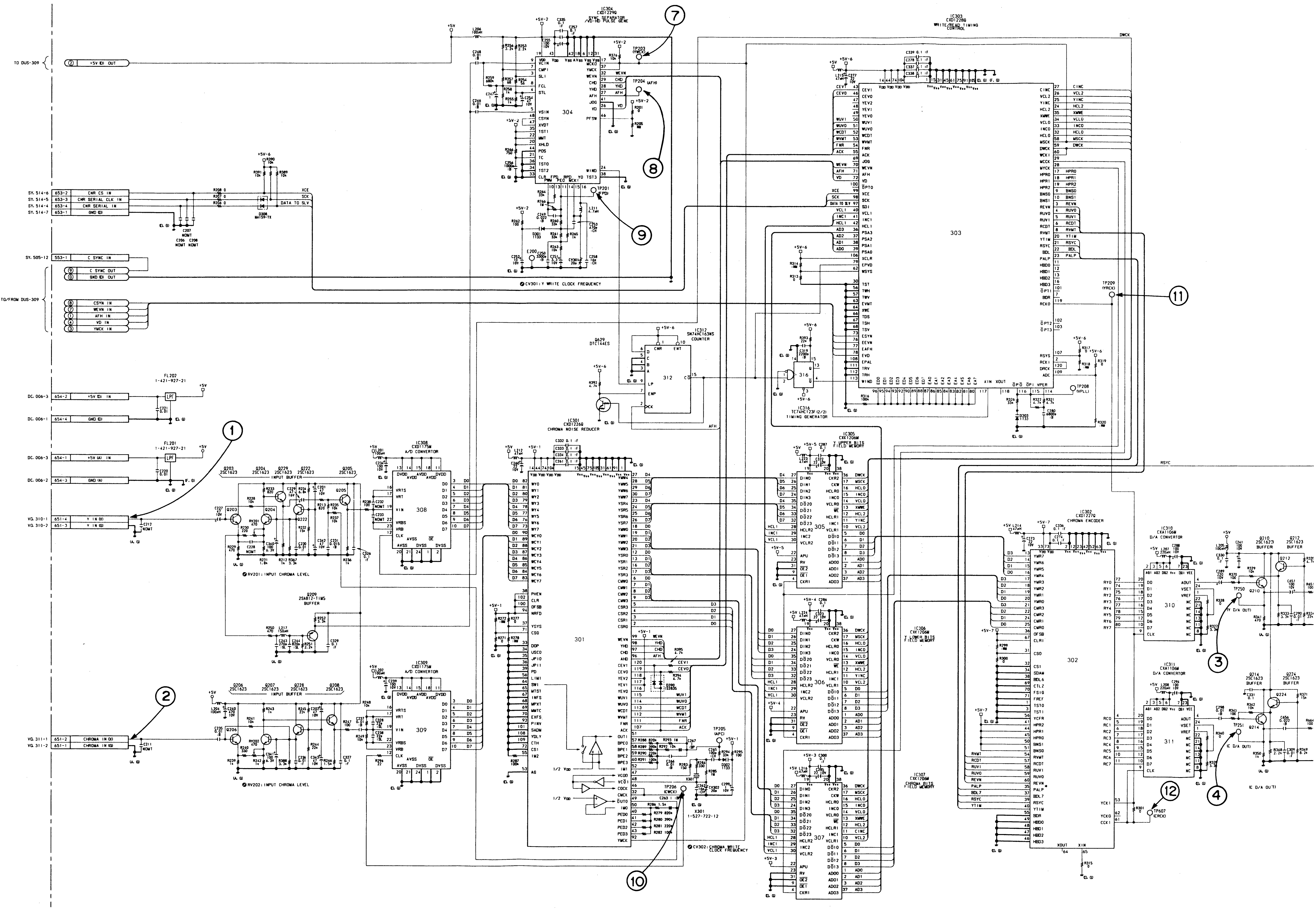

A
B
C
D
E
F
G
H
J
1
2
3
4
CN2
CN1
FL1
FL2
FL3
OUT
IN
IC1
IC2
IC4
RV2
RV3
RV4
RV5
LV2
DL1
DL2
TP3
TP4
TP5
TP6
TP7
TP8
TP9
TP10
TP12
E2
LOT NO.
YC-3
1-631-
SON
MADE IN

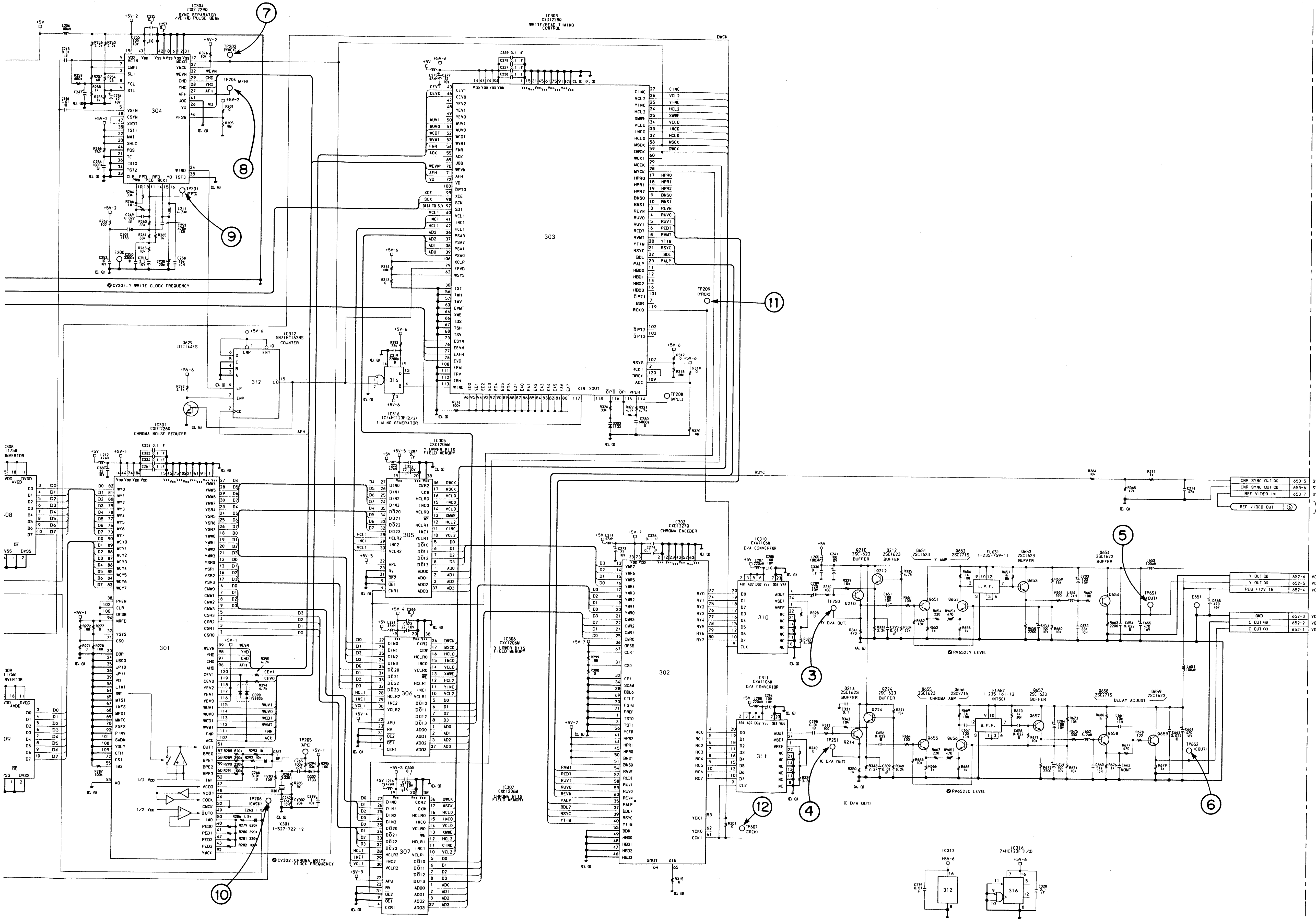

C
D
E
F
G
H
J
K
L
1
2
3
4
DIP
IC1
IC2
IC3
CN1
FL1
FL2
FL3
OUT
IN
RV1
RV2
RV3
RV4
RV5
LV1
LV2
DL1
DL2
TP1
TP3
TP4
TP5
TP6
TP7
TP8
E1
YC-39
A NO.
1-631-798-11
SONY
MADE IN JAPAN
LOT NO.

YC-39 —COMPONENT SIDE—
1-631-798-11, 12(1)
EVO-9800

DI-11 (1/2); DIGITAL CHROMA NOISE REDUCER

S/N UP TO 10060 (J)
S/N UP TO 10340 (UC)


TO DUS-309
+5V (D) OUT
TO/FROM DUS-309
CSYN IN
WEVN IN
AFH IN
VD IN
YWCK IN
CNR CS IN
CNR SERIAL CLK IN
CNR SERIAL IN
GND (D)
DATA TO SLV
C SYNC IN
C SYNC OUT
GND (D) OUT
FL202 1-421-927-21
FL201 1-421-927-21
+5V (D) IN
GND (D)
+5V (A) IN
GND (A)
Y IN (D)
CHROMA IN (D)
IC304 CXD1229Q SYNC SEPARATOR /VD-HD PULSE GENE
IC303 CXD1228Q WRITE/READ TIMING CONTROL
IC301 CXD1226Q CHROMA NOISE REDUCER
IC308 CXD1175M A/D CONVERTOR
IC309 CXD1175M A/D CONVERTOR
IC305 CXK1206M Y UPPER BITS FIELD MEMORY
IC306 CXK1206M Y LOWER BITS FIELD MEMORY
IC307 CXK1206M CHROMA BITS FIELD MEMORY
IC302 CXD1227Q CHROMA ENCODER
IC310 CXA1106M D/A CONVERTOR
IC311 CXA1106M D/A CONVERTOR
IC312 SN74HC163NS COUNTER
IC316 TC74HC123F (2/2) TIMING GENERATOR
Q629 DTC144ES
Q203 2SC1623 Q204 2SC1623 Q229 2SC1623 Q222 2SC1623 Q205 2SC1623 INPUT BUFFER
Q206 2SC1623 Q207 2SC1623 Q228 2SC1623 Q208 2SC1623 INPUT BUFFER
Q209 2SA812-T1M5 BUFFER
Q210 2SC1623 Q212 2SC1623 BUFFER
Q214 2SC1623 Q224 2SC1623 BUFFER
RV201: INPUT CHROMA LEVEL
RV202: INPUT CHROMA LEVEL
CV301: Y WRITE CLOCK FREQUENCY
CV302: CHROMA WRITE CLOCK FREQUENCY
X301 1-527-722-12
TP203 (YWCK)
TP204 (AFH)
TP201 (PD)
TP209 (YRCK)
TP208 (VPLL)
TP205 (APC)
TP206 (CWCK)
TP250 (Y D/A OUT)
TP251 (C D/A OUT)
TP607 (CRCK)
DWCK
RSYC
①
②
③
④
⑦
⑧
⑨
⑩
⑪
⑫


IC304
CXD1229Q
SYNC SEPARATOR
/VD-HD PULSE GENE
IC303
CXD1228Q
WRITE/READ TIMING
CONTROL
303
304
TP203
(WRCK)
TP204
(AFH)
TP201
(PCI)
TP209
(YRCK)
TP208
(WPLL)
⑦
⑧
⑨
⑪
CV301:Y WRITE CLOCK FREQUENCY
Q629
DTC144ES
IC312
SN74HC163NS
COUNTER
312
IC316
TC74HC123F (2/2)
TIMING GENERATOR
316
IC301
CXD1226Q
CHROMA NOISE REDUCER
301
IC305
CXK1206M
Y UPPER BITS
FIELD MEMORY
305
IC306
CXK1206M
Y LOWER BITS
FIELD MEMORY
306
IC307
CXK1206M
CHROMA BITS
FIELD MEMORY
307
IC302
CXD1227Q
CHROMA ENCODER
302
TP205
(APC)
TP206
(CWCK)
⑩
X301
1-527-722-12
CV302:CHROMA WRITE CLOCK FREQUENCY
TP607
(CRCK)
⑫
IC310
CXA1106M
D/A CONVERTOR
310
IC311
CXA1106M
D/A CONVERTOR
311
TP250
(Y D/A OUT)
TP251
(C D/A OUT)
③
④
Q210
2SC1623
BUFFER
Q212
2SC1623
BUFFER
Q651
2SC1623
Q652
2SC2715
Y AMP
FL651
1-235-759-11
L.P.F.
Q653
2SC1623
BUFFER
Q654
2SC1623
BUFFER
TP651
(Y OUT)
⑤
RV652:Y LEVEL
Q214
2SC1623
BUFFER
Q224
2SC1623
BUFFER
Q655
2SC1623
Q656
2SC2715
CHROMA AMP
FL652
1-235-761-12
(NTSC)
B.P.F.
Q657
2SC1623
BUFFER
Q658
2SC2715
Q659
2SC1623
DELAY ADJUST
TP657
(C OUT)
⑥
RV652:C LEVEL
RSYC
CNR SYNC OUT (Y)
CNR SYNC OUT (C)
REF VIDEO IN
REF VIDEO OUT
653-5
653-6
653-7
SY 514-3
SY 514-2
SY 514-1
TO DUS-309
Y OUT (C)
Y OUT (N)
REG +12V IN
GND
C OUT (C)
C OUT (N)
652-6
652-5
652-4
652-3
652-2
652-1
VG 310-4
VG 310-3
VG 310-5
VG 310-6
VG 311-4
VG 311-3
IC308
TC7S04F
INVERTOR
IC309
TC7S04F
INVERTOR
IC312
IC316
74HC123F (1/2)

13-101(a)

13-102(a)

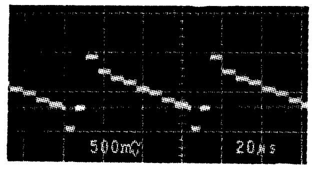
DI-11(1/2)

1-631-802-11, 12(2)
EVO-9800

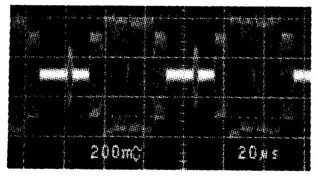
E F G H I J K L

DI-11

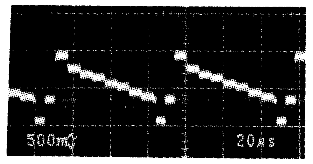
① CN651-4
REC



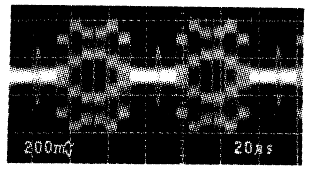
② CN651-2
REC



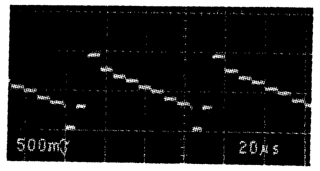
③ TP250
EE



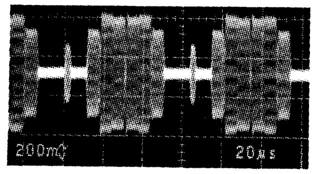
④ TP251
EE



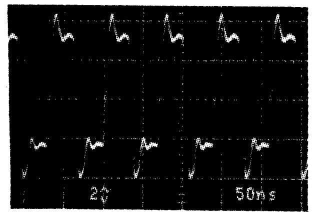
⑤ TP651
REC



⑥ TP652
REC

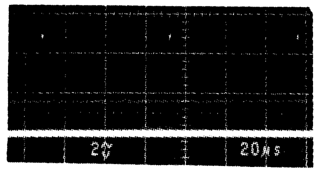


⑦ TP203
REC



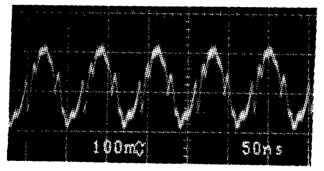
14·3MHz

⑧ TP204
REC



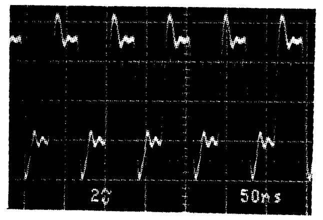
15·7kHz

⑨ TP201
REC



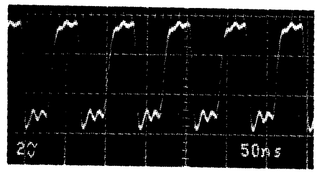
14.3MHz

⑩ TP206
REC



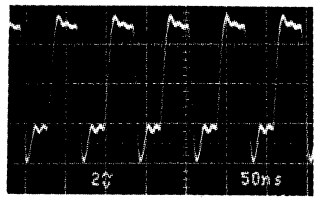
14.3MHz

⑪ TP209
REC



14.3MHz

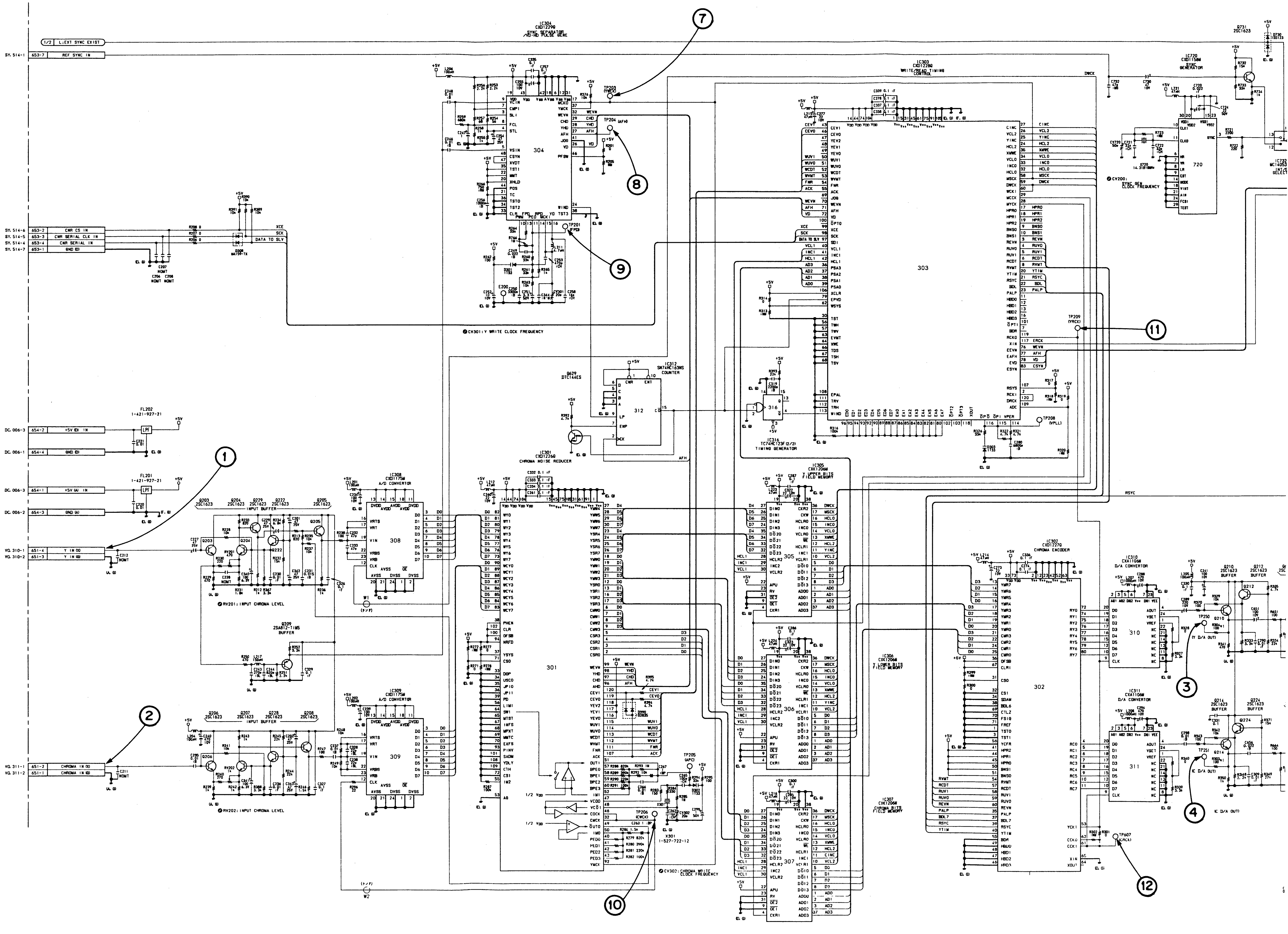
⑫ TP607
REC



14.3MHz

DI-11 (1/2); DIGITAL CHROMA NOISE REDUCER

S/N 10061 AND HIGHER (J)
S/N 10341 AND HIGHER (UC)



1/2 L/EXT SYNC EXIST
REF SYNC IN
IC304 CXD1229Q SYNC SEPARATOR /VD/HD PULSE GENE
IC303 CXD1228Q WRITE/READ TIMING CONTROL
IC720 CXD1158M SYNC GENERATOR
Q731 2SC1623
CY200: SYNC GEN CLOCK FREQUENCY
CMR CS IN
CMR SERIAL CLK IN
CMR SERIAL IN
GND (D)
DATA TO SLV
CV301: Y WRITE CLOCK FREQUENCY
IC312 SN74HC163NS COUNTER
IC316 TC74HC123F (2/2) TIMING GENERATOR
Q629 DTC144ES
IC301 CXD1226Q CHROMA NOISE REDUCER
IC305 CXK1206M Y UPPER BITS FIELD MEMORY
IC306 CXK1206M Y LOWER BITS FIELD MEMORY
IC307 CXK1206M CHROMA BITS FIELD MEMORY
IC302 CXD1227Q CHROMA ENCODER
IC308 CXD1175M A/D CONVERTOR
IC309 CXD1175M A/D CONVERTOR
IC310 CXA1106M D/A CONVERTOR
IC311 CXA1106M D/A CONVERTOR
FL202 1-421-927-21
FL201 1-421-927-21
+5V (D) IN
GND (D)
+5V (A) IN
GND (A)
Y IN (D)
Y IN (G)
CHROMA IN (D)
CHROMA IN (G)
Q203 2SC1623
Q204 2SC1623
Q229 2SC1623
Q222 2SC1623
Q205 2SC1623
INPUT BUFFER
RV201: INPUT CHROMA LEVEL
Q209 2SA812-T1M5 BUFFER
Q206 2SC1623
Q207 2SC1623
Q228 2SC1623
Q208 2SC1623
RV202: INPUT CHROMA LEVEL
CV302: CHROMA WRITE CLOCK FREQUENCY
X301 1-527-722-12
Q210 2SC1623 BUFFER
Q212 2SC1623 BUFFER
Q214 2SC1623 BUFFER
Q224 2SC1623 BUFFER
(Y D/A OUT)
(C D/A OUT)
RSYC
TP203 (WDCK)
TP204 (AFH)
TP201 (FPD)
TP209 (YRCK)
TP208 (VPLL)
TP205 (APC)
TP206 (CWCK)
TP250
TP251
TP607 (CCK)
①
②
③
④
⑦
⑧
⑨
⑩
⑪
⑫

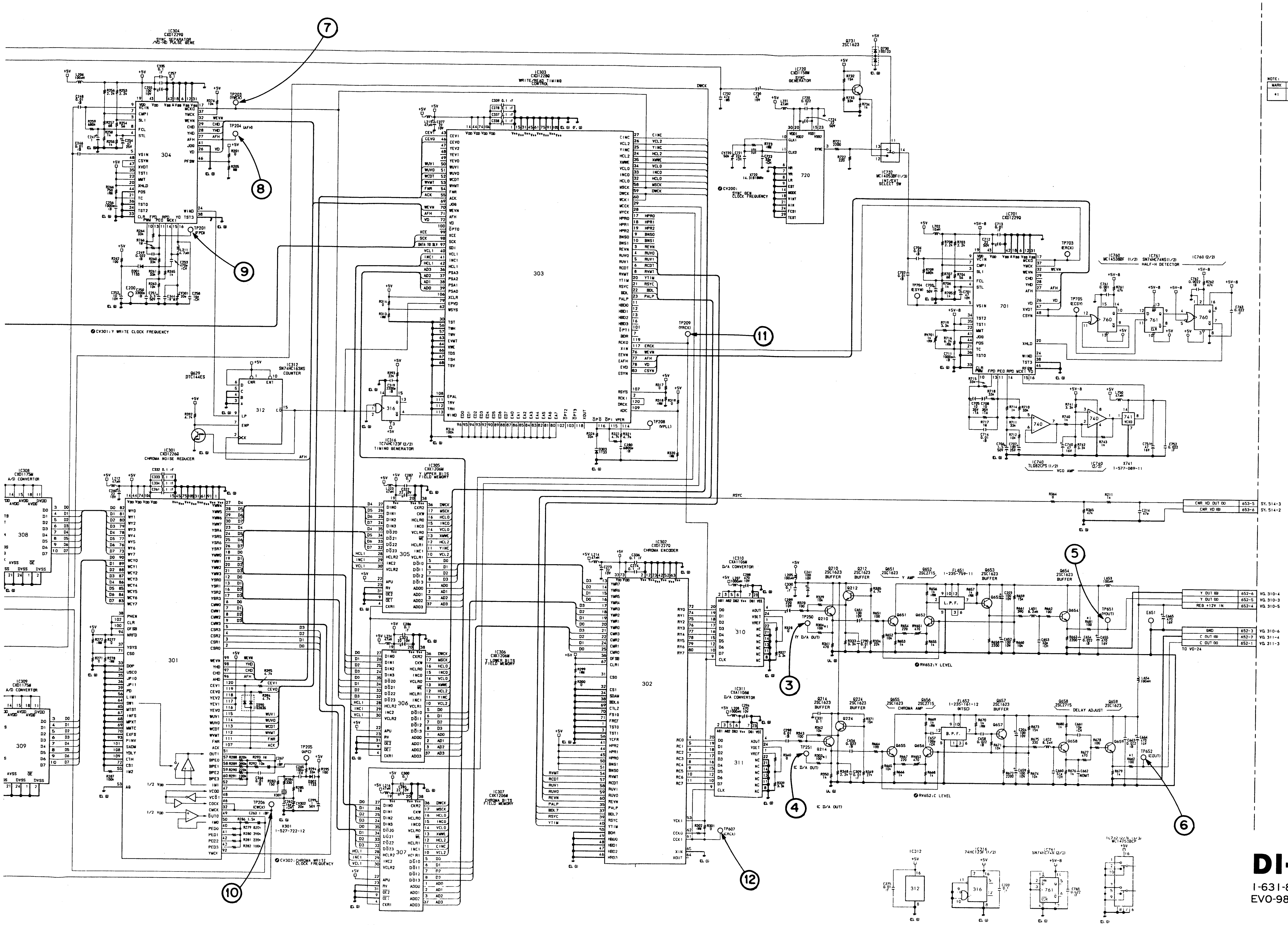
13-100 (b)

13-101 (b)

B C D E F G H

NOTE:

MARK	CHANGE INFORMATION	SERIAL NO
*1	R303, 304, 681, 682 ADDED	J:10331- UC:10871-


IC304 CXD1229Q SYNC SEPARATOR /VD·HD PULSE GENE
TP203 (YWCK)
TP204 (AFH)
TP201 (FPD)
⑦
⑧
⑨
CV301: Y WRITE CLOCK FREQUENCY
IC303 CXD1228Q WRITE/READ TIMING CONTROL
303
IC312 SN74HC163NS COUNTER
Q629 DTC144ES
IC316 TC74HC123F (2/2) TIMING GENERATOR
TP209 (YRCK)
⑪
TP208 (VPLL)
IC720 CXD1158M SYNC GENERATOR
Q731 2SC1623
D730 1SS123
X720 14.31818MHz
CV200: SYNC GEN CLOCK FREQUENCY
IC732 MC14053BF(1/3) INT/EXT SELECT SW
IC701 CXD1229Q
TP703 (ERCK)
TP704 (ESYN)
TP705 (ECSY)
IC760 MC14538BF (1/2)
IC761 SN74HC74NS(1/2)
IC760 (2/2)
HALF-H DETECTOR
IC740 TL082CPS(1/2)
IC760 (2/2)
X741 1-577-089-11
VCO AMP
IC308 CXD1175M A/D CONVERTOR
IC309 CXD1175M A/D CONVERTOR
IC301 CXD1226Q CHROMA NOISE REDUCER
301
TP205 (APC)
TP206 (CWCK)
X301 1-527-722-12
CV302: CHROMA WRITE CLOCK FREQUENCY
⑩
IC305 CXK1206M Y UPPER BITS FIELD MEMORY
IC306 CXK1206M Y LOWER BITS FIELD MEMORY
IC307 CXK1206M CHROMA BITS FIELD MEMORY
IC302 CXD1227Q CHROMA ENCODER
302
TP607 (CRCK)
⑫
RSYC
CNR VD OUT (X) 653-5 SY, 514-3
CNR VD (G) 653-6 SY, 514-2
IC310 CXA1106M D/A CONVERTOR
IC311 CXA1106M D/A CONVERTOR
TP250 (Y D/A OUT)
TP251 (C D/A OUT)
③
④
Q210 2SC1623 BUFFER
Q212 2SC1623 BUFFER
Q651 2SC1623 Q652 2SC2715 Y AMP
FL651 1-235-759-11
L.P.F.
Q653 2SC1623 BUFFER
Q654 2SC1623 BUFFER
TP651 (YOUT)
⑤
E651
RV652: Y LEVEL
Q214 2SC1623 BUFFER
Q224 2SC1623 BUFFER
Q655 2SC1623 Q656 2SC2715 CHROMA AMP
FL652 1-235-161-12 (NTSC)
B.P.F.
Q657 2SC1623 BUFFER
Q658 2SC2715 Q659 2SC1623 DELAY ADJUST
TP652 (COUT)
⑥
RV652: C LEVEL
Y OUT (G) 652-6 VO, 310-4
Y OUT (X) 652-5 VO, 310-3
REG +12V IN 652-4 VO, 310-5
GND 652-3 VO, 310-6
C OUT (G) 652-2 VO, 311-4
C OUT (X) 652-1 VO, 311-3
TO VO-24
IC312
IC316 74HC123F (1/2)
IC761 SN74HC74N (2/2)
IC732 (2/3), (3/3) MC14053BCP

13-101(b)

13-102(b)

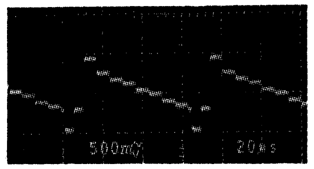
E F G H I J K L

DI-11(1/2)

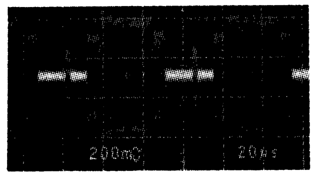
1-631-802-13, 14, 15(1)
EVO-9800

DI-11

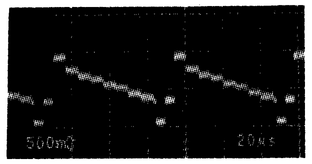
① CN651-4
REC



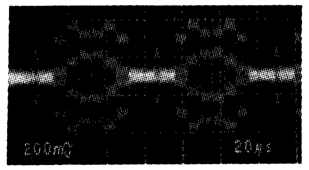
② CN651-2
REC



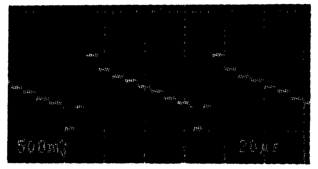
③ TP250
EE



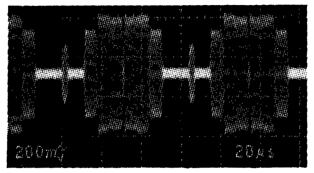
④ TP251
EE



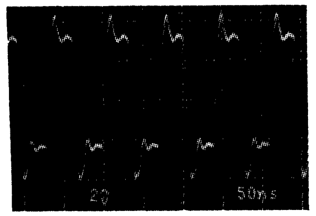
⑤ TP651
REC



⑥ TP652
REC

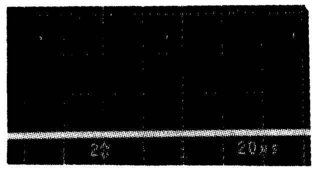


⑦ TP203
REC



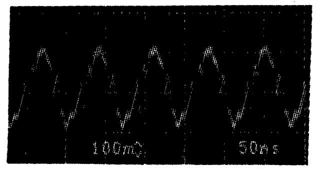
14-3MHz

⑧ TP204
REC



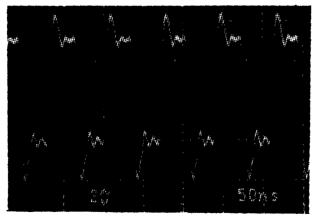
15-7kHz

⑨ TP201
REC



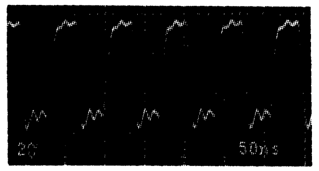
14.3MHz

⑩ TP206
REC



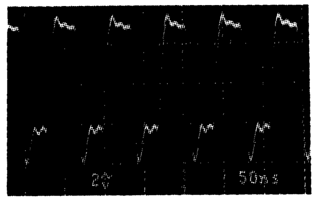
14.3MHz

⑪ TP209
REC



14.3MHz

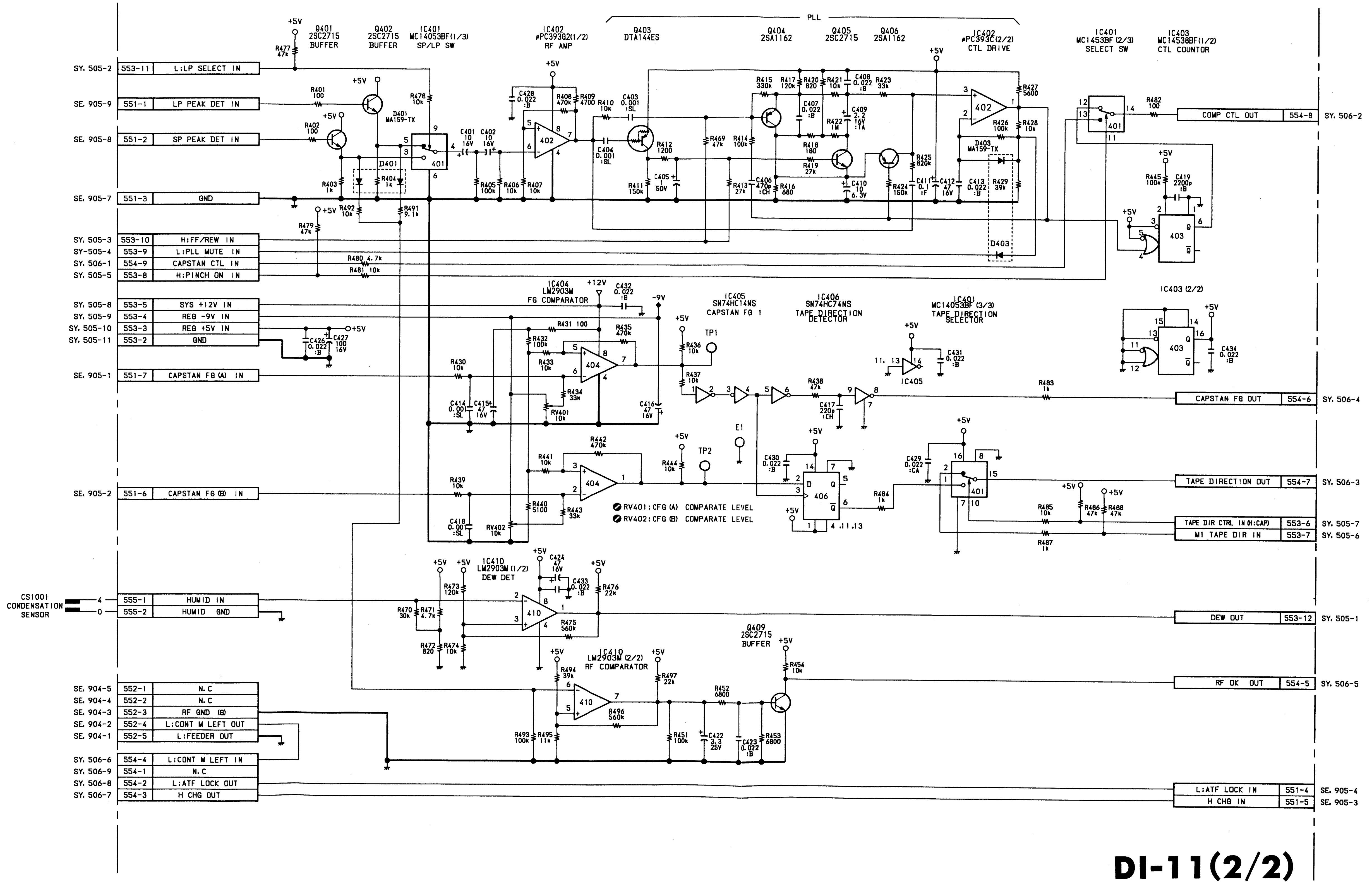
⑫ TP607
REC



14.3MHz

DI-11 (2/2); CTL DETECT/CAPSTAN FG COMPARATE

S/N UP TO 10060 (J)
S/N UP TO 10340 (UC)

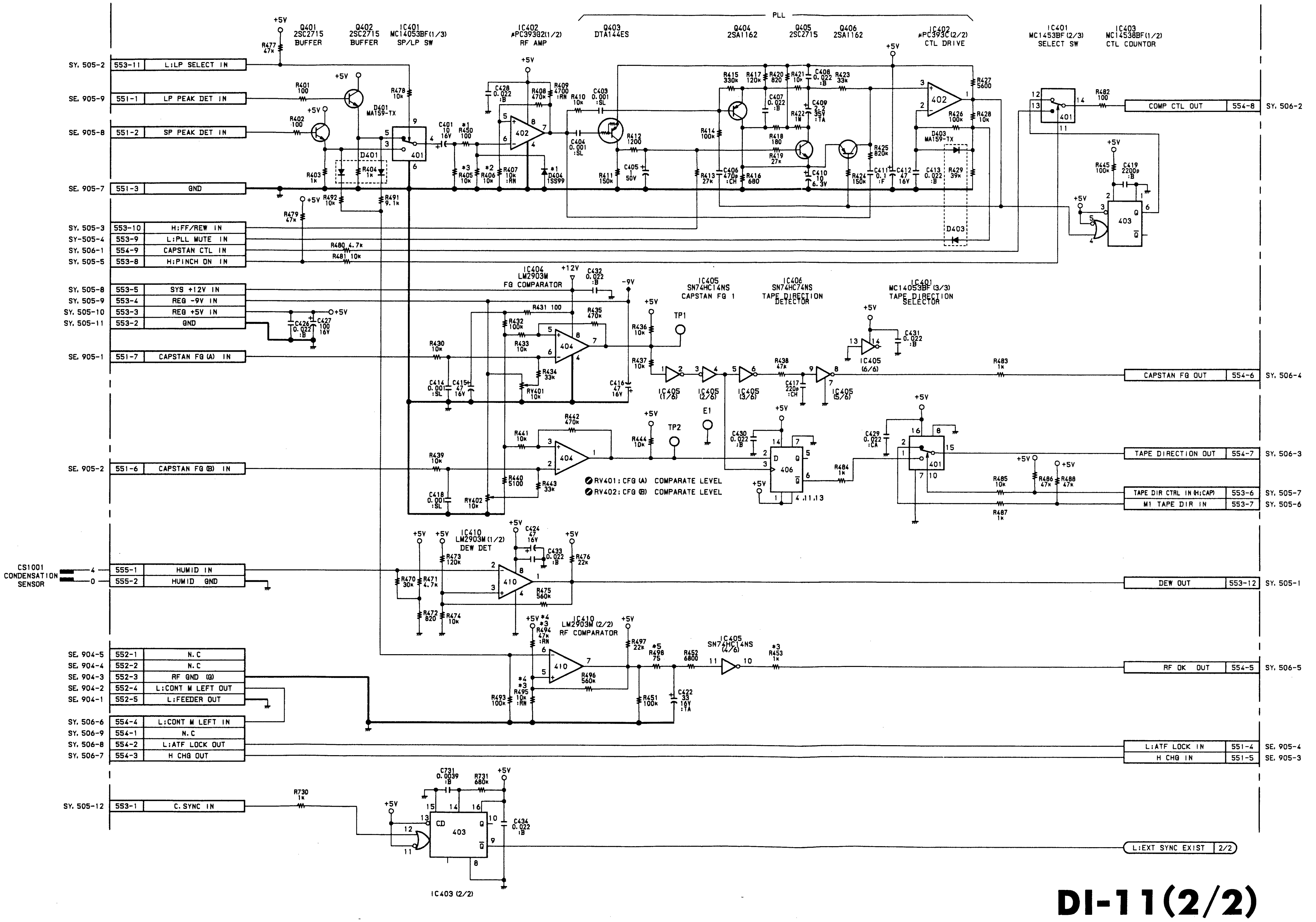

SY. 505-2 553-11 L:LP SELECT IN
SE. 905-9 551-1 LP PEAK DET IN
SE. 905-8 551-2 SP PEAK DET IN
SE. 905-7 551-3 GND
SY. 505-3 553-10 H:FF/REW IN
SY-505-4 553-9 L:PLL MUTE IN
SY. 506-1 554-9 CAPSTAN CTL IN
SY. 505-5 553-8 H:PINCH ON IN
SY. 505-8 553-5 SYS +12V IN
SY. 505-9 553-4 REG -9V IN
SY. 505-10 553-3 REG +5V IN
SY. 505-11 553-2 GND
SE. 905-1 551-7 CAPSTAN FG (A) IN
SE. 905-2 551-6 CAPSTAN FG (B) IN
CS1001 CONDENSATION SENSOR
555-1 HUMID IN
555-2 HUMID GND
SE. 904-5 552-1 N.C
SE. 904-4 552-2 N.C
SE. 904-3 552-3 RF GND (G)
SE. 904-2 552-4 L:CONT M LEFT OUT
SE. 904-1 552-5 L:FEEDER OUT
SY. 506-6 554-4 L:CONT M LEFT IN
SY. 506-9 554-1 N.C
SY. 506-8 554-2 L:ATF LOCK OUT
SY. 506-7 554-3 H CHG OUT
Q401 2SC2715 BUFFER
Q402 2SC2715 BUFFER
IC401 MC14053BF(1/3) SP/LP SW
IC402 μPC393G2(1/2) RF AMP
PLL
Q403 DTA144ES
Q404 2SA1162
Q405 2SC2715
Q406 2SA1162
IC402 μPC393C(2/2) CTL DRIVE
IC401 MC1453BF (2/3) SELECT SW
IC403 MC14538BF(1/2) CTL COUNTOR
D401 MA159-TX
D403 MA159-TX
IC403 (2/2)
IC404 LM2903M FG COMPARATOR
IC405 SN74HC14NS CAPSTAN FG 1
IC406 SN74HC74NS TAPE DIRECTION DETECTOR
IC401 MC14053BF (3/3) TAPE DIRECTION SELECTOR
TP1
TP2
E1
RV401:CFG (A) COMPARATE LEVEL
RV402:CFG (B) COMPARATE LEVEL
IC410 LM2903M (1/2) DEW DET
IC410 LM2903M (2/2) RF COMPARATOR
Q409 2SC2715 BUFFER
COMP CTL OUT 554-8 SY. 506-2
CAPSTAN FG OUT 554-6 SY. 506-4
TAPE DIRECTION OUT 554-7 SY. 506-3
TAPE DIR CTRL IN (H:CAP) 553-6 SY. 505-7
M1 TAPE DIR IN 553-7 SY. 505-6
DEW OUT 553-12 SY. 505-1
RF OK OUT 554-5 SY. 506-5
L:ATF LOCK IN 551-4 SE. 905-4
H CHG IN 551-5 SE. 905-3

DI-11(2/2)

1-631-802-11, 12(1)
EVO-9800

DI-11 (2/2); CTL DETECT/CAPSTAN FG COMPARATE

S/N 10061 AND HIGHER (J)
S/N 10341 AND HIGHER (UC)


SY. 505-2 553-11 L:LP SELECT IN
SE. 905-9 551-1 LP PEAK DET IN
SE. 905-8 551-2 SP PEAK DET IN
SE. 905-7 551-3 GND
SY. 505-3 553-10 H:FF/REW IN
SY-505-4 553-9 L:PLL MUTE IN
SY. 506-1 554-9 CAPSTAN CTL IN
SY. 505-5 553-8 H:PINCH ON IN
SY. 505-8 553-5 SYS +12V IN
SY. 505-9 553-4 REG -9V IN
SY. 505-10 553-3 REG +5V IN
SY. 505-11 553-2 GND
SE. 905-1 551-7 CAPSTAN FG (A) IN
SE. 905-2 551-6 CAPSTAN FG (B) IN
CS1001 CONDENSATION SENSOR
555-1 HUMID IN
555-2 HUMID GND
SE. 904-5 552-1 N.C
SE. 904-4 552-2 N.C
SE. 904-3 552-3 RF GND (G)
SE. 904-2 552-4 L:CONT M LEFT OUT
SE. 904-1 552-5 L:FEEDER OUT
SY. 506-6 554-4 L:CONT M LEFT IN
SY. 506-9 554-1 N.C
SY. 506-8 554-2 L:ATF LOCK OUT
SY. 506-7 554-3 H CHG OUT
SY. 505-12 553-1 C.SYNC IN
Q401 2SC2715 BUFFER
Q402 2SC2715 BUFFER
IC401 MC14053BF(1/3) SP/LP SW
IC402 μPC393G2(1/2) RF AMP
Q403 DTA144ES
PLL
Q404 2SA1162
Q405 2SC2715
Q406 2SA1162
IC402 μPC393C(2/2) CTL DRIVE
IC401 MC1453BF(2/3) SELECT SW
IC403 MC14538BF(1/2) CTL COUNTOR
D401 MA159-TX
D403 MA159-TX
D404 1SS99
IC404 LM2903M FG COMPARATOR
IC405 SN74HC14NS CAPSTAN FG 1
IC406 SN74HC74NS TAPE DIRECTION DETECTOR
IC401 MC14053BF(3/3) TAPE DIRECTION SELECTOR
IC410 LM2903M(1/2) DEW DET
IC410 LM2903M(2/2) RF COMPARATOR
IC405 SN74HC14NS (4/6)
IC403 (2/2)
TP1
TP2
E1
RV401: CFG (A) COMPARATE LEVEL
RV402: CFG (B) COMPARATE LEVEL
COMP CTL OUT 554-8 SY. 506-2
CAPSTAN FG OUT 554-6 SY. 506-4
TAPE DIRECTION OUT 554-7 SY. 506-3
TAPE DIR CTRL IN (H:CAP) 553-6 SY. 505-7
M1 TAPE DIR IN 553-7 SY. 505-6
DEW OUT 553-12 SY. 505-1
RF OK OUT 554-5 SY. 506-5
L:ATF LOCK IN 551-4 SE. 905-4
H CHG IN 551-5 SE. 905-3
L:EXT SYNC EXIST 2/2

NOTE:

MARK	CHANGE INFORMATION	SERIAL NO
*1	D404, R450 ADDED	J:10331- UC:10871-
*2	R406 DELETED	
*3	CHANGED R405 100K → 10K R453 6.8K → 1K R494 39K → 68K R495 11K → 16K	
*4	CHANGED R494 68K → 47K R495 16K → 10K	J:10381- UC:11271-
*5	R498 75 ADDED	

DI-11(2/2)

1-631-802-13, 14, 15(1)
EVO-9800

.1; DIGITAL CHROMA NOISE REDUCER

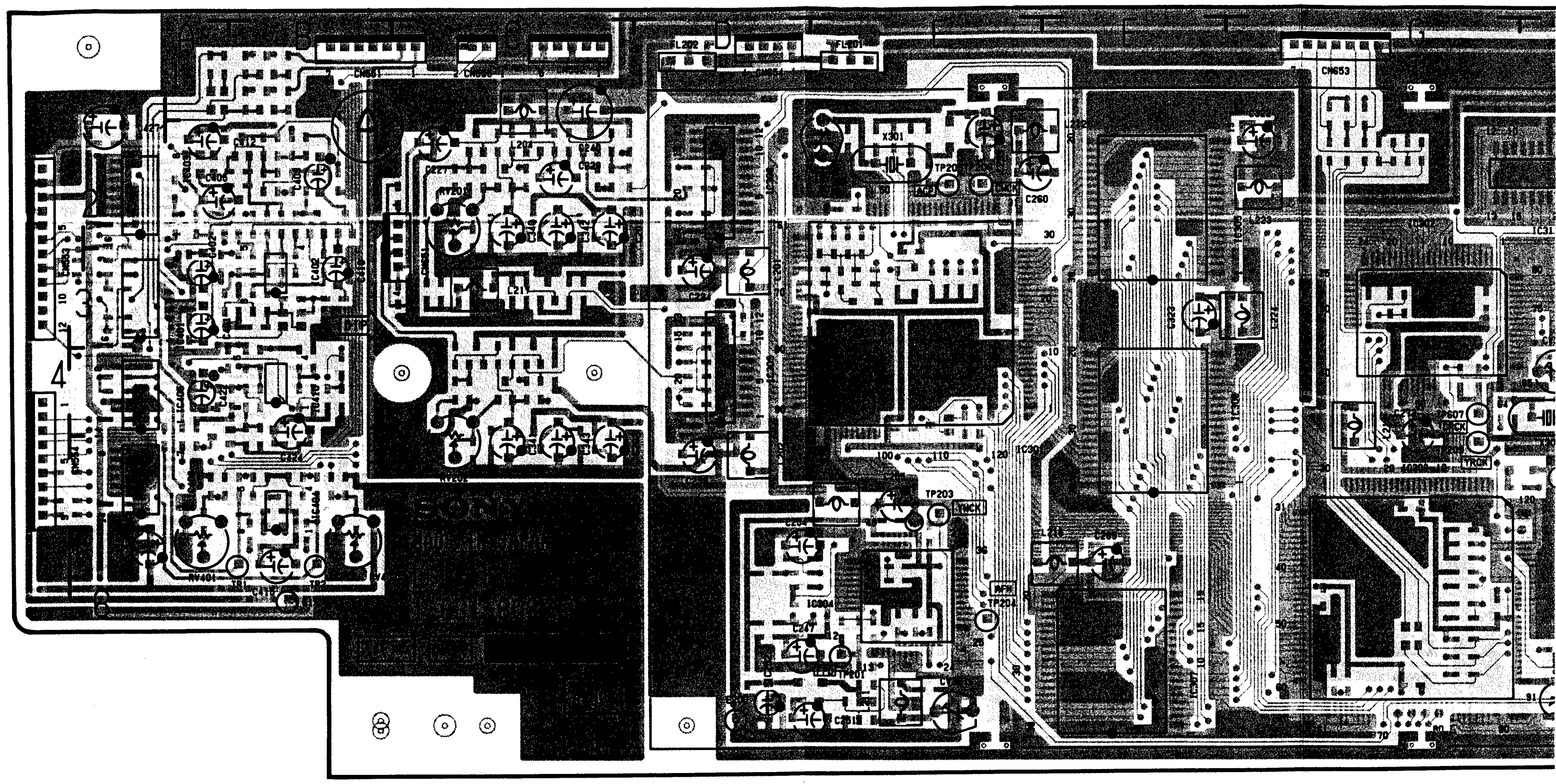
N UP TO 10060 (J)
N UP TO 10340 (UC)

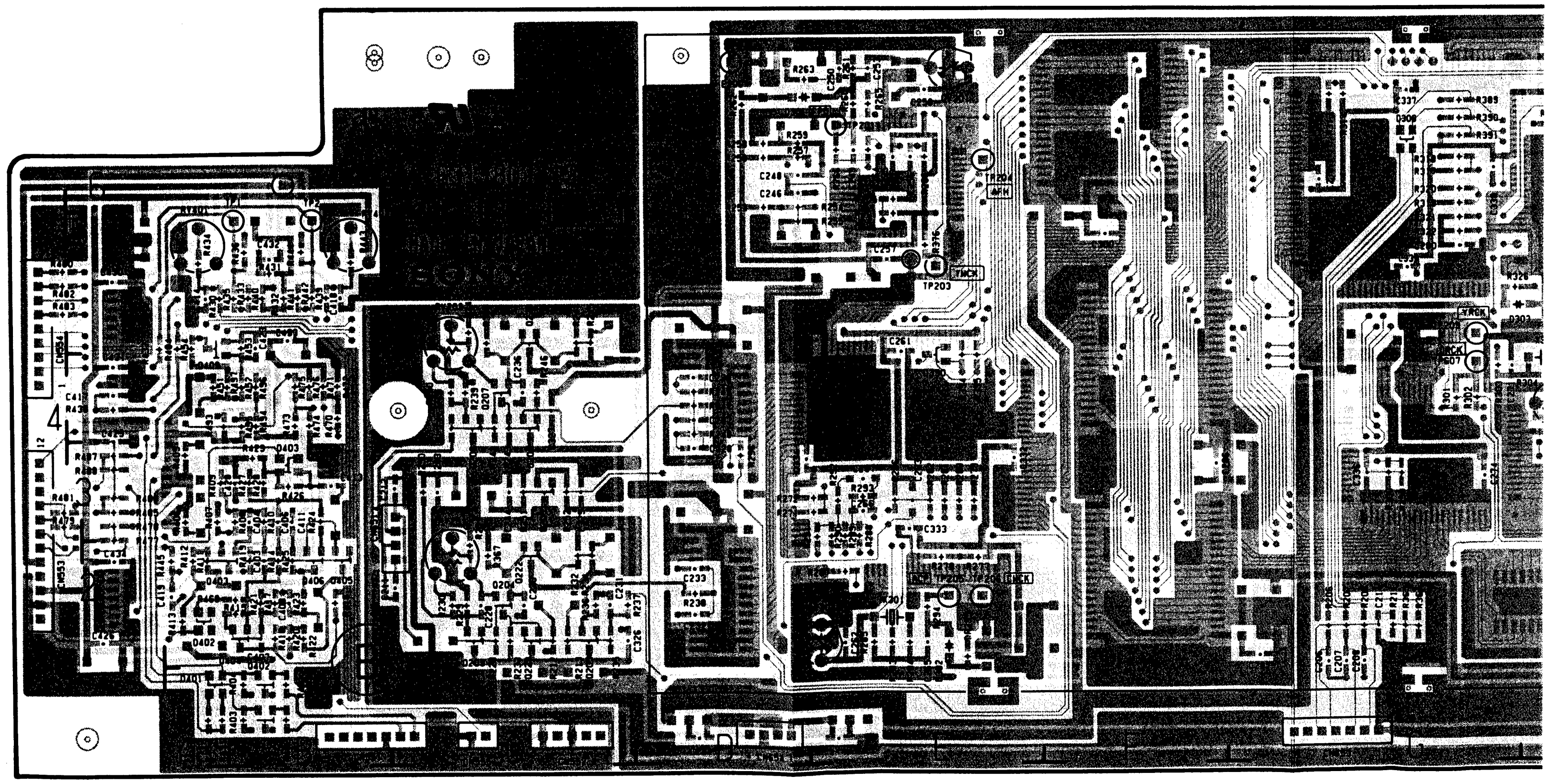
DI-11(1-631-802-11,12) C

CN551	B-1
CN552	C-1
CN553	A-3
CN554	A-5
CN555	C-1
CN651	C-3
CN652	J-1
CN653	G-1
CN654	D-1
CV301	E-6
CV302	E-2
CV303	H-4
D301	E-6
D302	E-2
D303	G-5
E1	B-6
E200	D-6
E651	K-2
FL201	E-1
FL202	D-1
FL651	K-3
FL652	J-3
IC301	E-5
IC302	G-2
IC303	G-5
IC304	E-6
IC305	G-2
IC306	G-4
IC307	F-6
IC308	D-2
IC309	D-4
IC310	H-3
IC311	H-2
IC312	H-5
IC316	H-6
IC401	A-3
IC402	B-3
IC403	A-2
IC404	B-5
IC405	A-4
IC406	A-5
IC410	B-4
RV201	C-2
RV202	C-5
RV401	A-6
RV402	B-6
RV651	K-4
RV652	J-4
TP1	B-6
TP2	B-6
TP201	E-6
TP203	E-5
TP204	E-6
TP205	E-2
TP206	E-2
TP208	H-5
TP209	G-5
TP250	K-5
TP251	J-5
TP607	G-4
TP651	K-2
TP652	J-2
X301	E-2
X302	H-5

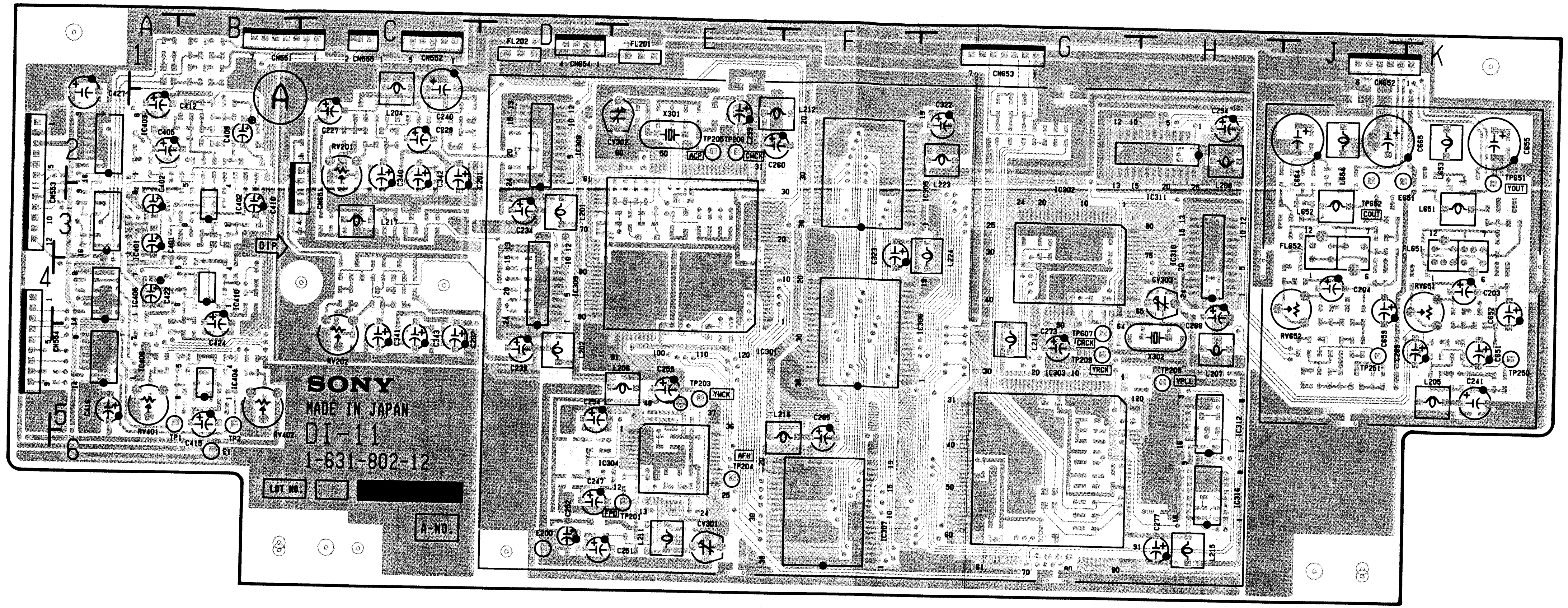
DI-11(1-631-802-11,12) S

D308	G-6
D401	A-1
D402	A-2
D403	B-3
Q203	C-2
Q204	C-2
Q205	C-1
Q206	C-3
Q207	C-4
Q208	C-3
Q209	C-3
Q210	K-5
Q212	K-5
Q214	J-4
Q222	C-2
Q224	J-5
Q228	C-5
Q229	C-1
Q401	B-1
Q402	B-1
Q403	A-2
Q404	B-2
Q405	B-2
Q406	B-2
Q409	A-4
Q629	H-5
Q651	K-4
Q652	K-3
Q653	K-2
Q654	K-2
Q655	J-4
Q656	J-3
Q657	J-2
Q658	J-3
Q659	J-2

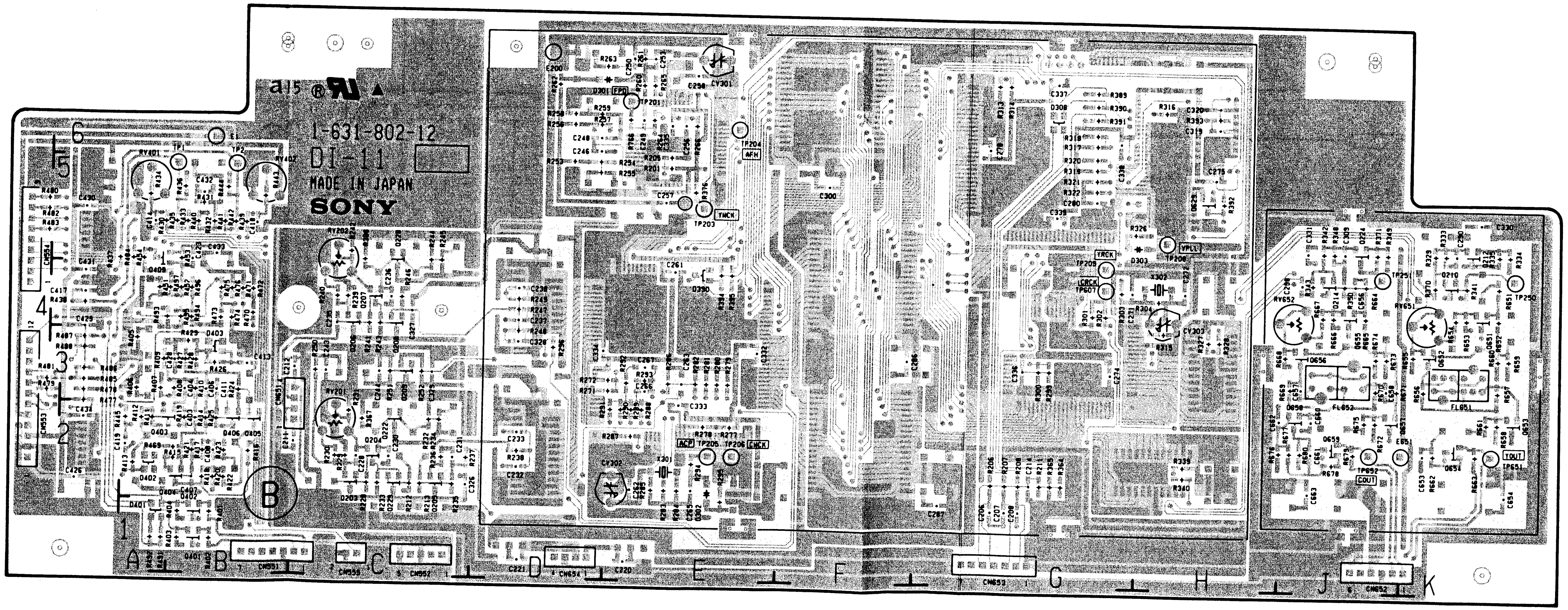




P203	E-5
P204	E-6
P205	E-2
P206	E-2
P208	H-5
P209	G-5
P250	K-5
P251	J-5
P607	G-4
P651	K-2
P652	J-2
301	E-2
302	H-5


SONY
MADE IN JAPAN
DI-11
1-631-802-12
LOT NO.
A-NO.
A
A B C D E F G H J K
1 2 3 4 5 6
IC301
IC302
IC303
X301
X302
CN651
CN652
CN653
CN654
CN655
DIP

DI-11 -COMPONENT SIDE-
1-631-802-11, 12(1)
EVO-9800


SONY
MADE IN JAPAN
DI-11
1-631-802-12
B
A B C D E F G H J K
1 2 3 4 5 6
CN651
CN652
CN653
CN654
CN655

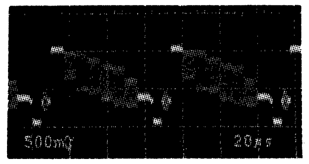
DI-11 -SOLDERING SIDE-
1-631-802-11, 12(1)
EVO-9800

DUS-309; READ TIMING CONTROL PULSE GENERATOR

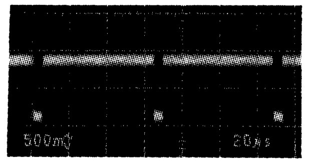
S/N UP TO 10060 (J)
S/N UP TO 10340 (UC)

DUS-309

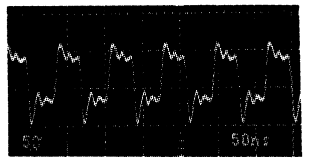
① TP5
EE



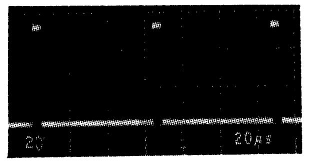
② TP4
EE

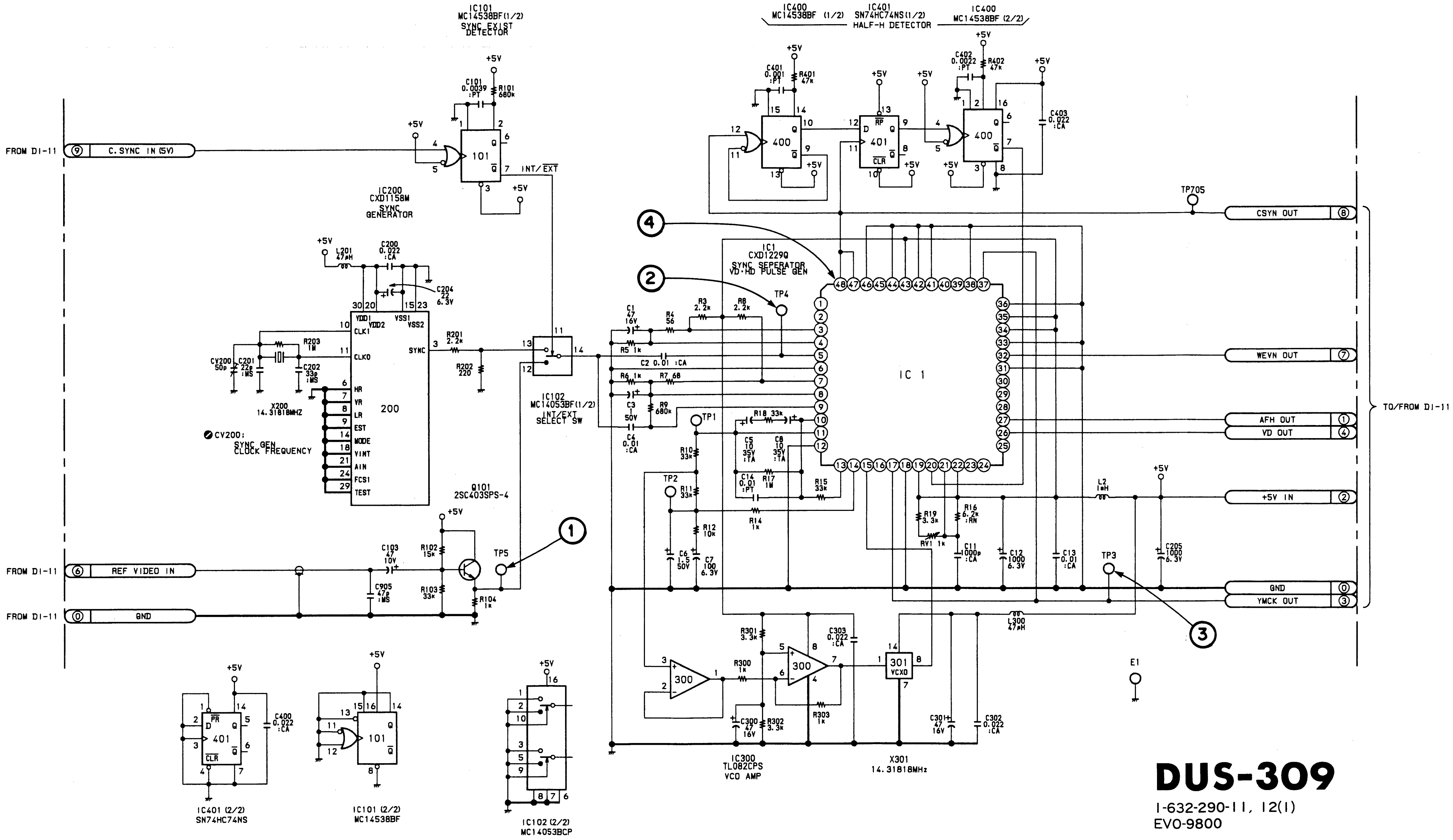


③ TP3
EE



④ IC001-48
EE



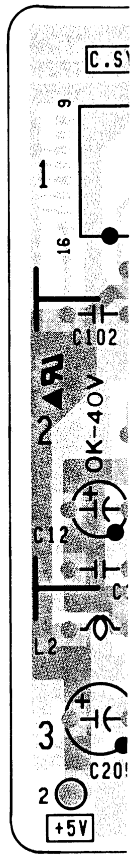

IC101
MC14538BF(1/2)
SYNC EXIST DETECTOR
FROM DI-11
C.SYNC IN (5V)
REF VIDEO IN
GND
INT/EXT
IC200
CXD1158M
SYNC GENERATOR
CV200: SYNC GEN CLOCK FREQUENCY
X200 14.31818MHz
Q101 2SC403SPS-4
TP5
IC102
MC14053BF(1/2)
INT/EXT SELECT SW
IC400 MC14538BF (1/2)
IC401 SN74HC74NS(1/2)
HALF-H DETECTOR
IC400 MC14538BF (2/2)
IC1
CXD1229Q
SYNC SEPERATOR VD·HD PULSE GEN
IC 1
TP4
TP1
TP2
TP3
TP705
CSYN OUT
WEVN OUT
AFH OUT
VD OUT
+5V IN
GND
YMCK OUT
TO/FROM DI-11
IC300
TL082CPS
VCO AMP
X301
14.31818MHz
E1
IC401 (2/2)
SN74HC74NS
IC101 (2/2)
MC14538BF
IC102 (2/2)
MC14053BCP

DUS-309

1-632-290-11, 12(1)
EVO-9800

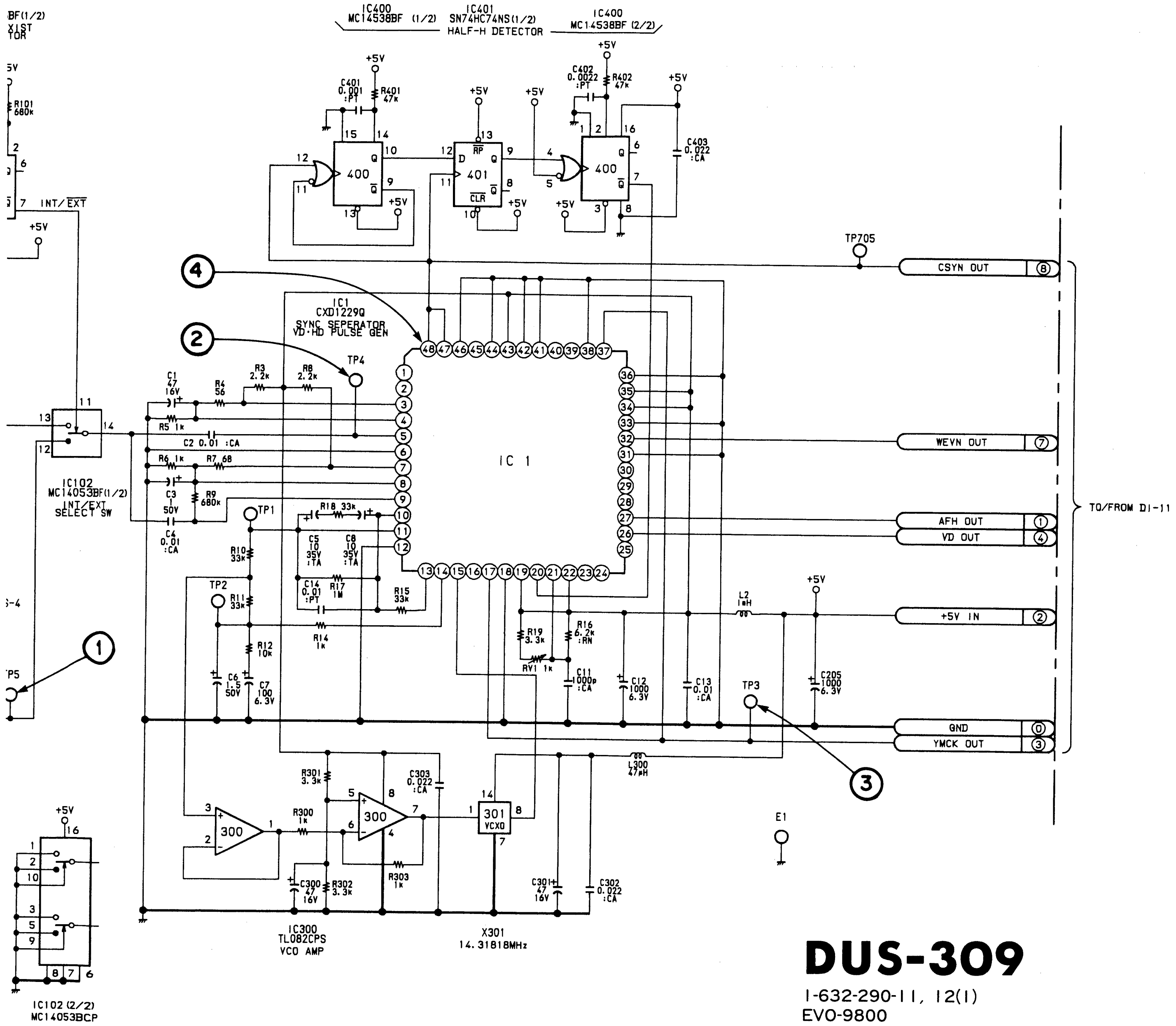
DUS-309; RE

S/N UP TO 10
S/N UP TO 10

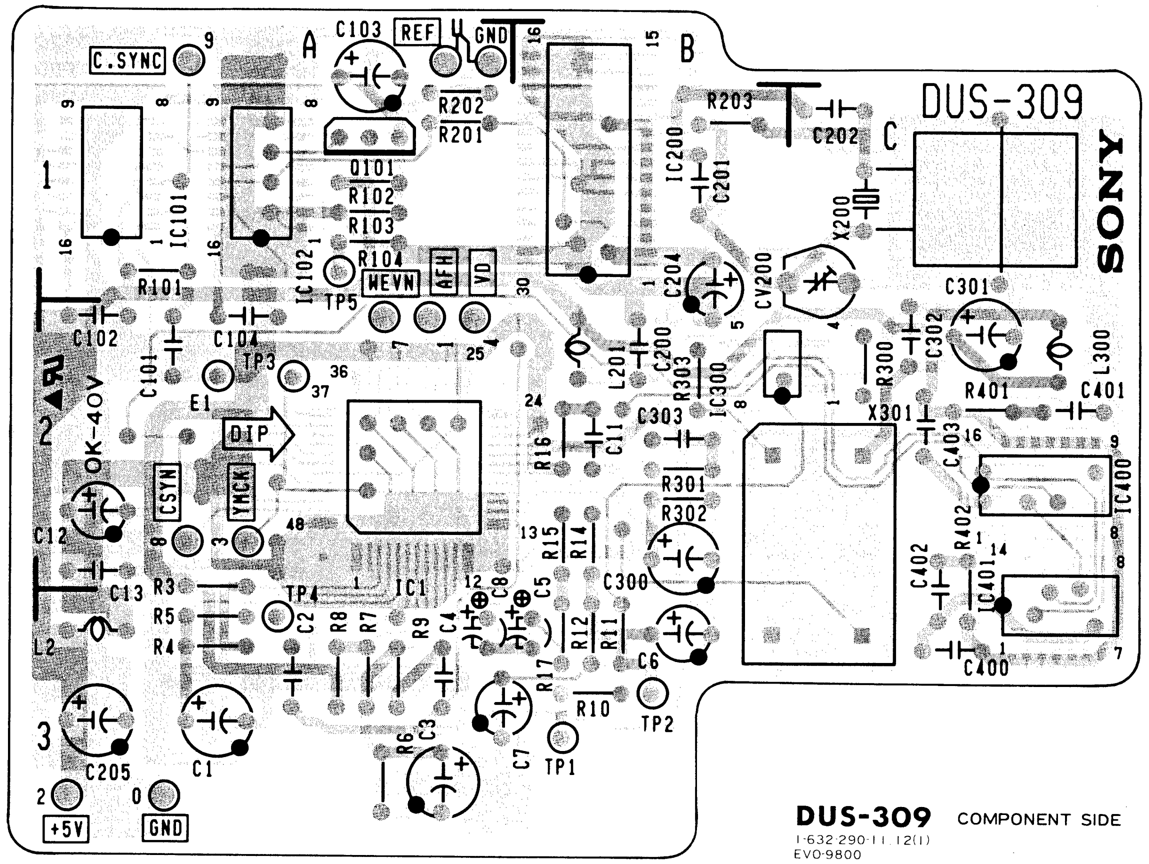

C.S
C102
C12
L2
C205
+5V
OK-40V

DUS-309; READ TIMING CONTROL PULSE GENERATOR

S/N UP TO 10060 (J)
S/N UP TO 10340 (UC)


IC400 MC14538BF (1/2)
IC401 SN74HC74NS(1/2) HALF-H DETECTOR
IC400 MC14538BF (2/2)
IC1 CXD1229Q SYNC SEPERATOR VD·HD PULSE GEN
IC 1
IC102 MC14053BF(1/2) INT/EXT SELECT SW
INT/EXT
TP705
CSYN OUT
WEVN OUT
AFH OUT
VD OUT
+5V IN
GND
YMCK OUT
TO/FROM DI-11
IC300 TL082CPS VCO AMP
X301 14.31818MHz
301 VCXO
L300 47μH
L2 1mH
IC102 (2/2) MC14053BCP
TP1
TP2
TP3
TP4
TP5
E1
①
②
③
④

DUS-309
1-632-290-11, 12(1)
EVO-9800


C.SYNC
REF
GND
A
B
C
DUS-309
SONY
IC101
IC102
IC200
IC300
IC400
IC401
IC1
X200
X301
CV200
Q101
WEVN
AFH
VD
DIP
CSYN
YMCK
OK-40V
+5V
GND
TP1
TP2
TP3
TP4
TP5
E1

DUS-309 COMPONENT SIDE
1-632-290-11 12(1)
EVO-9800

DI-11; DIGITAL CHROMA NOISE REDUCER

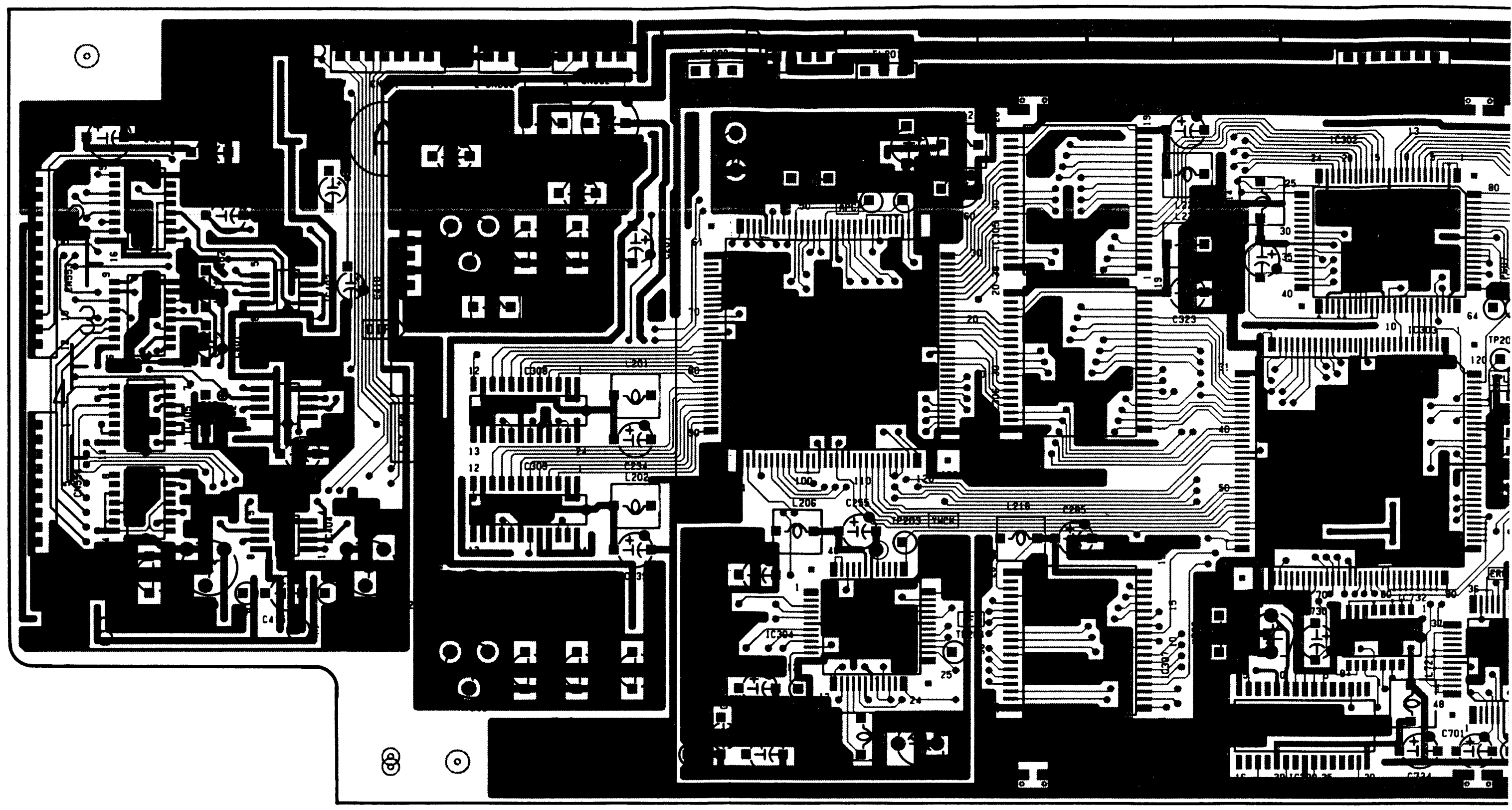
S/N 10061 TO 10330 (J)
S/N 10341 TO 10870 (UC)

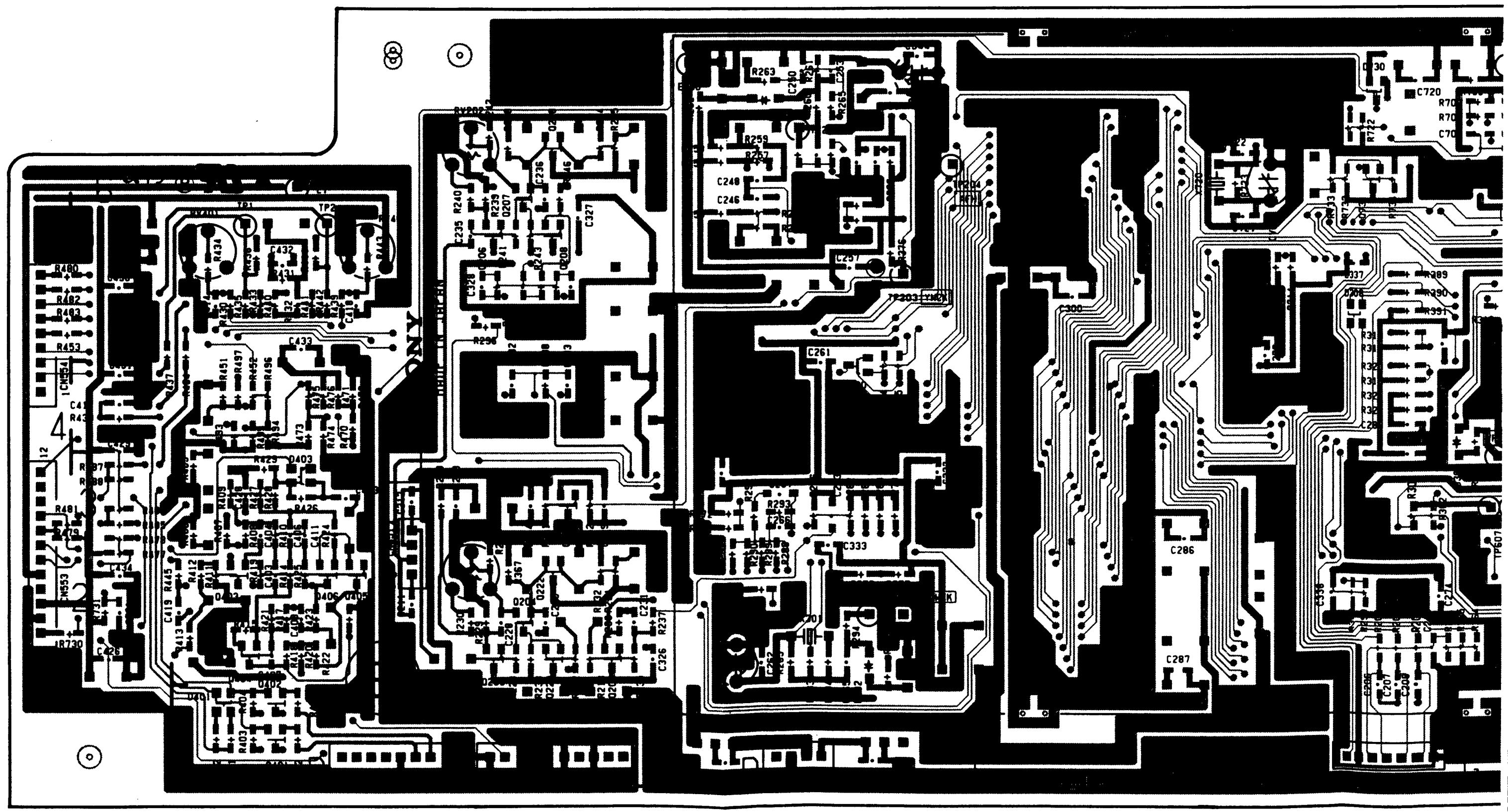
DI-11(1-631-802-13,14) C

CN551	B-1
CN552	C-1
CN553	A-3
CN554	A-5
CN555	C-1
CN651	C-3
CN652	J-1
CN653	G-1
CN654	D-1
CV301	E-6
CV302	D-2
CV720	F-6
D404	A-3
E1	B-6
E200	D-6
E651	K-2
FL201	E-1
FL202	D-1
FL651	K-3
FL652	J-3
IC301	E-5
IC302	G-2
IC303	G-3
IC304	D-6
IC305	E-2
IC306	E-4
IC307	F-6
IC308	C-4
IC309	C-5
IC310	H-3
IC311	H-2
IC312	H-3
IC316	G-5
IC401	A-3
IC402	B-3
IC403	A-2
IC404	B-5
IC405	A-4
IC406	A-5
IC410	B-4
IC710	G-6
IC720	G-6
IC732	G-5
IC740	H-6
IC760	J-6
IC761	J-6
RV201	C-2
RV202	C-6
RV401	A-5
RV402	B-5
RV651	K-3
RV652	J-4
RV701	H-5
TP1	B-6
TP2	B-6
TP201	D-6
TP203	E-5
TP204	E-6
TP205	E-2
TP206	E-2
TP208	G-3
TP209	G-3
TP250	K-5
TP251	J-5
TP607	G-3
TP651	K-2
TP652	J-2
TP703	G-5
TP704	G-6
TP705	J-5
X301	D-2
X720	F-6
X741	H-6

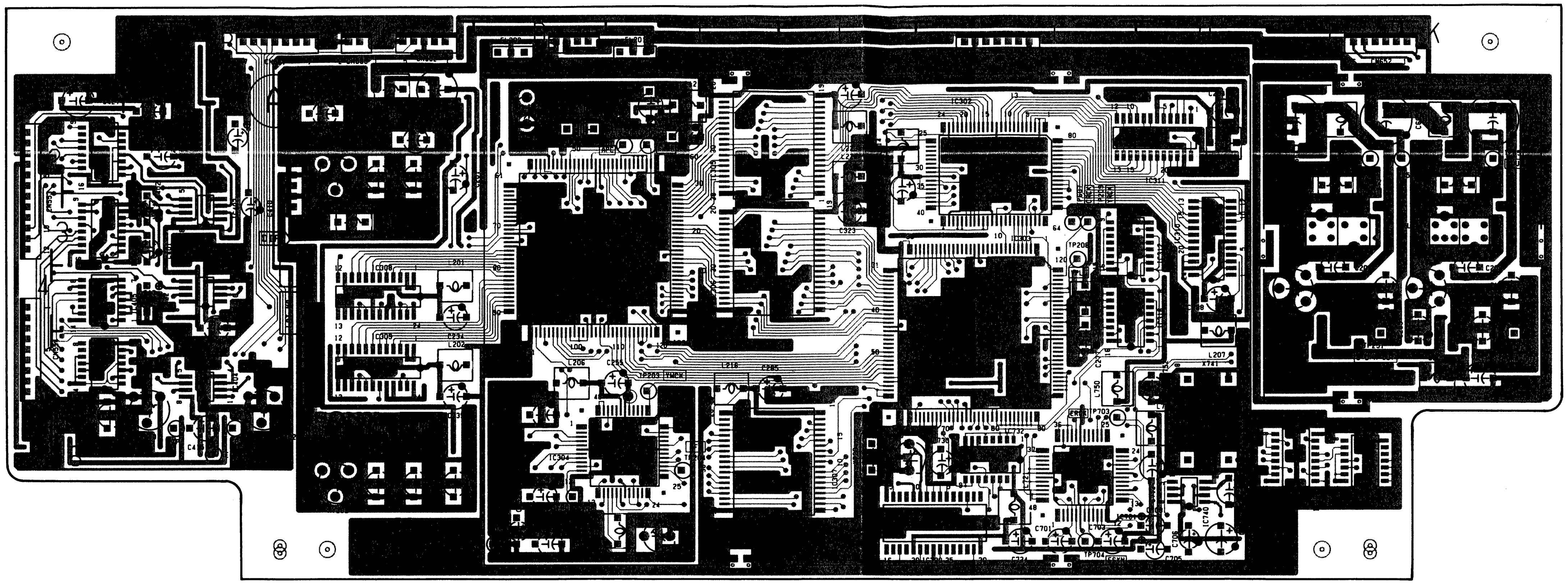
DI-11(1-631-802-13,14) S

D301	D-6
D302	E-2
D303	G-3
D308	G-5
D390	G-6
D401	A-1
D402	A-2
D403	B-3
D730	G-6
Q203	C-2
Q204	C-2
Q205	C-1
Q206	C-5
Q207	C-6
Q208	C-5
Q209	C-3
Q210	K-5
Q212	K-5
Q214	J-4
Q222	C-2
Q224	J-5
Q228	C-6
Q229	C-1
Q401	B-1
Q402	B-2
Q403	A-2
Q404	B-2
Q405	B-2
Q406	B-2
Q409	A-4
Q629	G-3
Q651	K-4
Q652	K-3
Q653	K-2
Q654	K-2
Q655	J-4
Q656	J-3
Q657	J-2
Q658	J-3
Q659	J-2
Q731	G-6

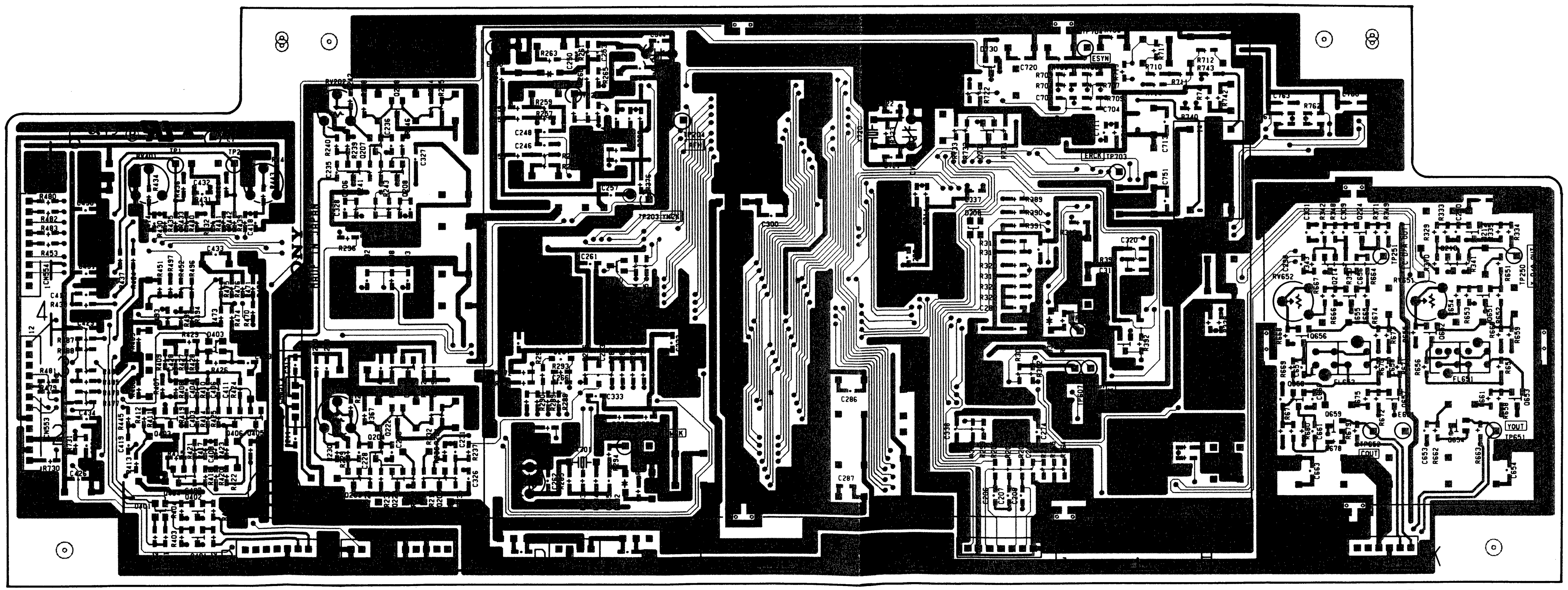




01	H-5
	B-6
	B-6
01	D-6
03	E-5
04	E-6
05	E-2
06	E-2
08	G-3
09	G-3
50	K-5
51	J-5
07	G-3
51	K-2
52	J-2
03	G-5
04	G-6
05	J-5
1	D-2
0	F-6
1	H-6


IC302
IC311
IC304
TP203
TP703
TP704
X741

DI-11 -COMPONENT SIDE-
1-631-802-13, 14(1)
EVO-9800


TP203
TP703
TP251
TP250
TP651
YOUT
ESYN

DI-11 -SOLDERING SIDE-
1-631-802-13, 14(1)
EVO-9800

DI-11; DIGITAL CHROMA NOISE REDUCER

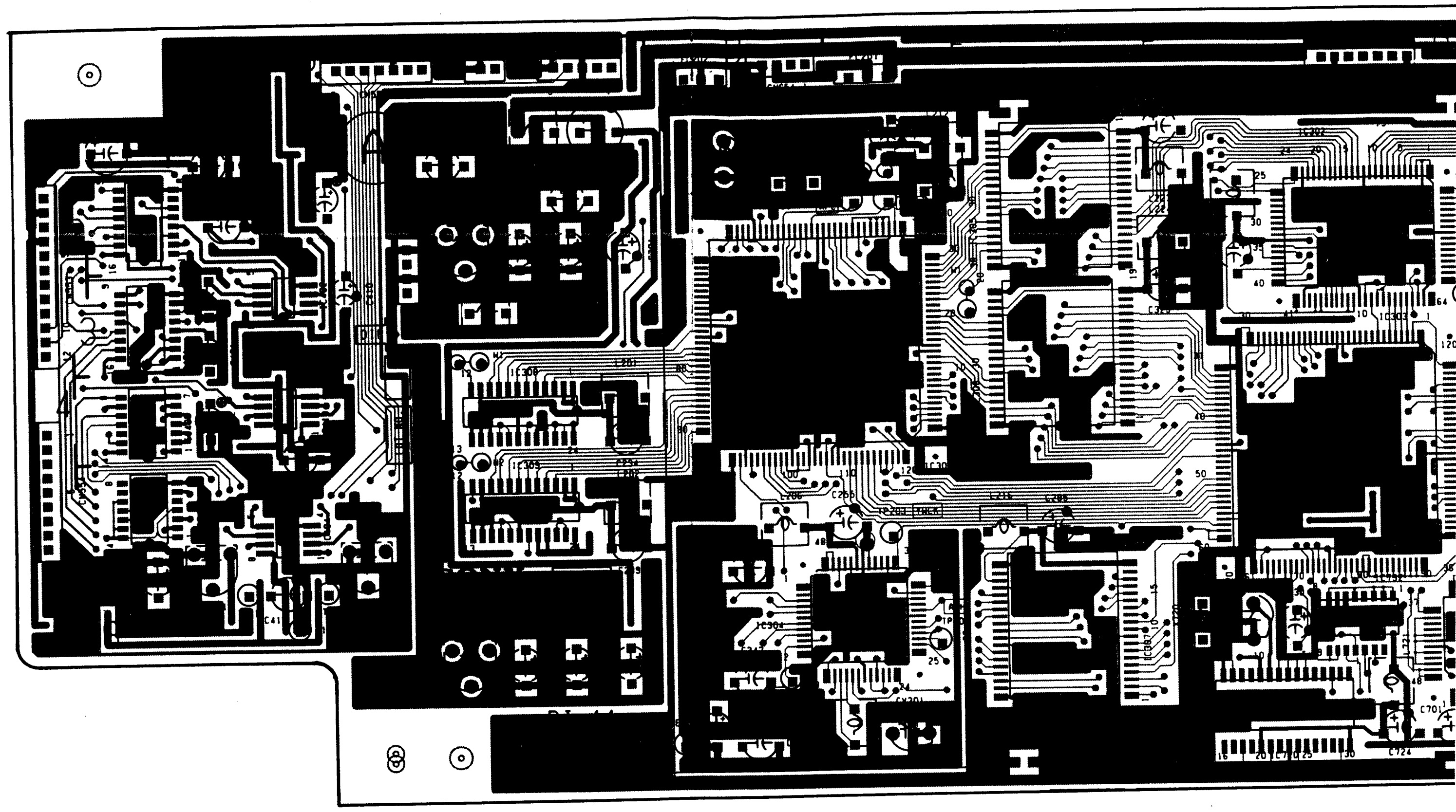
S/N 10331 AND HIGHER (J)
S/N 10871 AND HIGHER (UC)

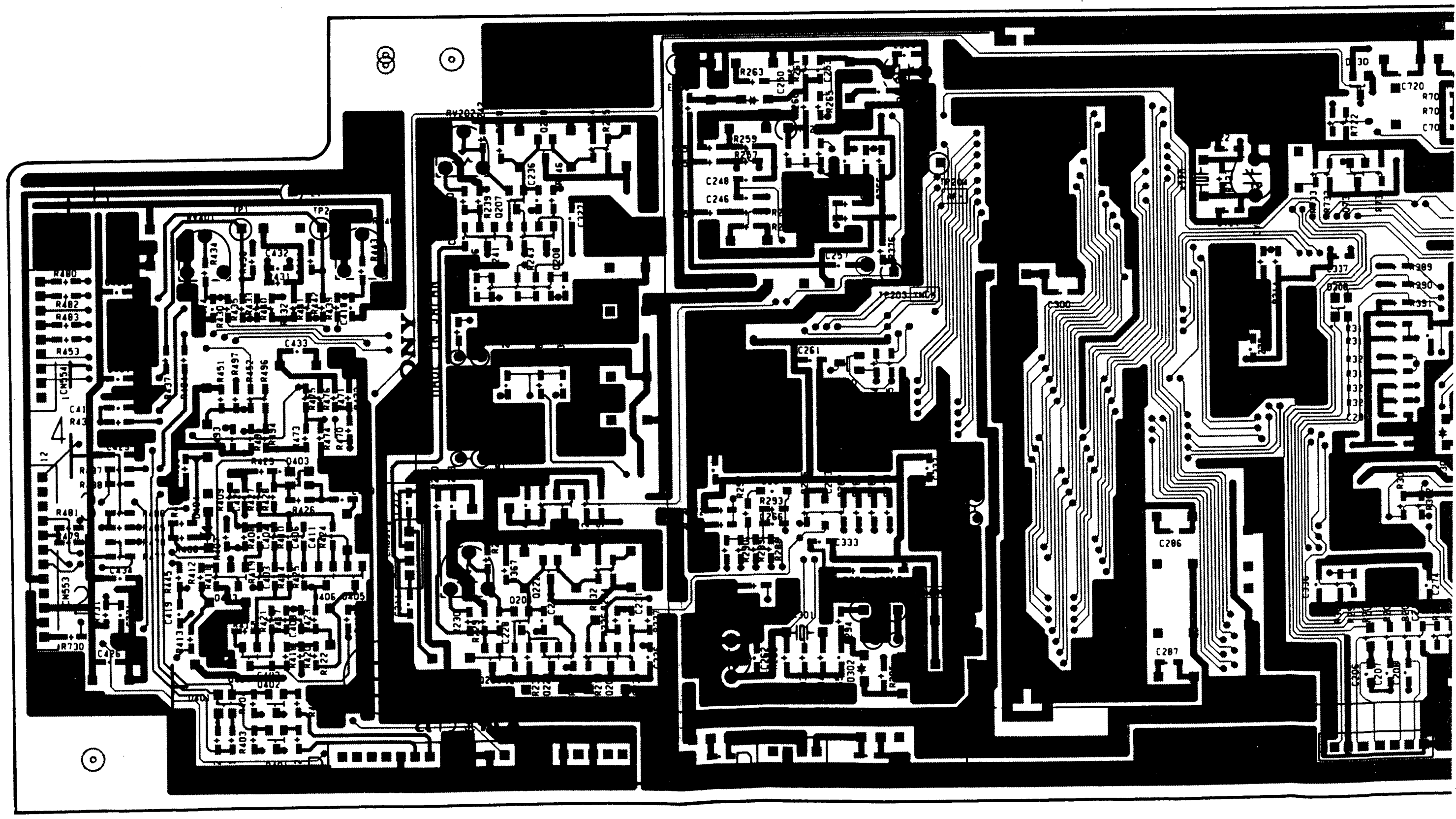
DI-11(1-631-802-15) C

CN551	B-1
CN552	C-1
CN553	A-3
CN554	A-5
CN555	C-1
CN651	C-3
CN652	J-1
CN653	G-1
CN654	D-1
CV301	E-6
CV302	D-2
CV720	F-6
E1	B-6
E200	D-6
E651	K-2
FL201	E-1
FL202	D-1
FL651	K-3
FL652	J-3
IC301	E-5
IC302	G-2
IC303	G-3
IC304	D-6
IC305	E-2
IC306	E-4
IC307	F-6
IC308	C-4
IC309	C-5
IC310	H-3
IC311	H-2
IC312	H-3
IC316	H-4
IC401	A-3
IC402	B-3
IC403	A-2
IC404	B-5
IC405	A-4
IC406	A-5
IC410	B-4
IC701	G-6
IC720	G-6
IC732	G-5
IC740	H-6
IC760	J-6
IC761	J-6
RV201	C-2
RV202	C-6
RV401	A-5
RV402	B-5
RV651	K-3
RV652	J-4
TP1	B-6
TP2	B-6
TP201	D-6
TP203	E-5
TP204	E-6
TP205	E-2
TP206	E-2
TP208	G-3
TP209	G-3
TP250	K-5
TP251	J-5
TP607	G-3
TP651	K-2
TP652	J-2
TP703	G-5
TP704	G-6
X301	D-2
X720	F-6
X741	H-5

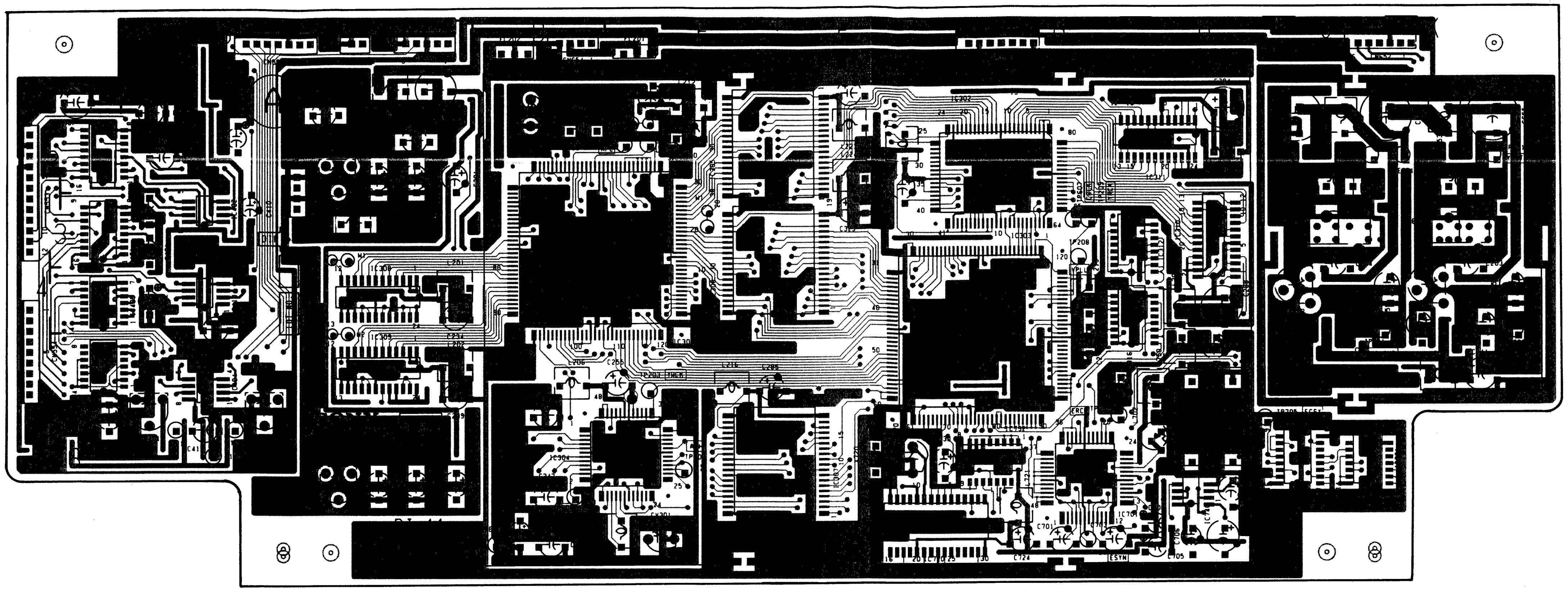
DI-11(1-631-802-15) S

D301	D-6
D302	E-2
D303	G-3
D308	G-6
D390	G-6
D401	A-1
D403	B-3
D730	G-6
Q203	C-2
Q204	C-2
Q205	C-1
Q206	C-5
Q207	C-6
Q208	C-5
Q209	C-3
Q210	K-5
Q212	K-5
Q214	J-4
Q222	C-2
Q224	J-5
Q228	C-6
Q229	C-1
Q401	B-1
Q402	B-2
Q403	A-2
Q404	B-2
Q405	B-2
Q406	B-2
Q629	G-3
Q651	K-4
Q652	K-3
Q653	K-2
Q654	K-2
Q655	J-4
Q656	J-3
Q657	K-2
Q658	J-3
Q659	J-2
Q731	G-6

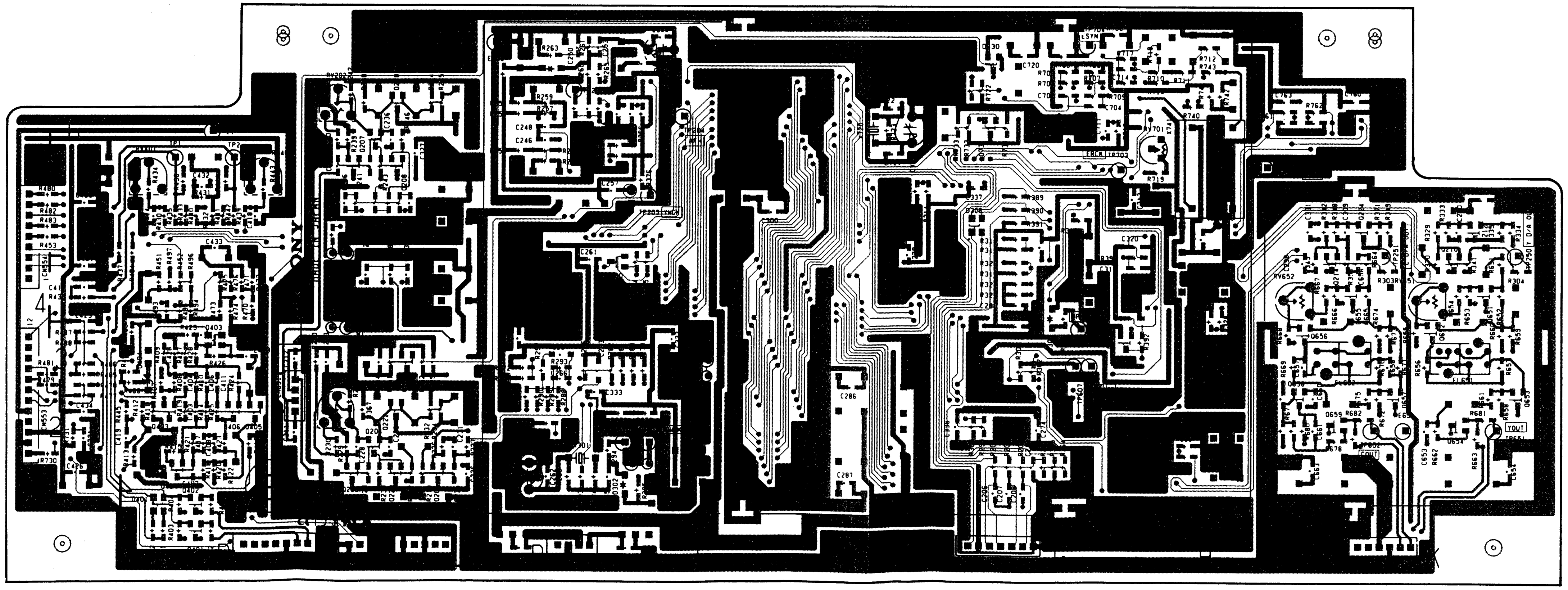




2	B-6
201	D-6
203	E-5
204	E-6
205	E-2
206	E-2
208	G-3
209	G-3
250	K-5
251	J-5
507	G-3
551	K-2
552	J-2
703	G-5
704	G-6
01	D-2
20	F-6
41	H-5

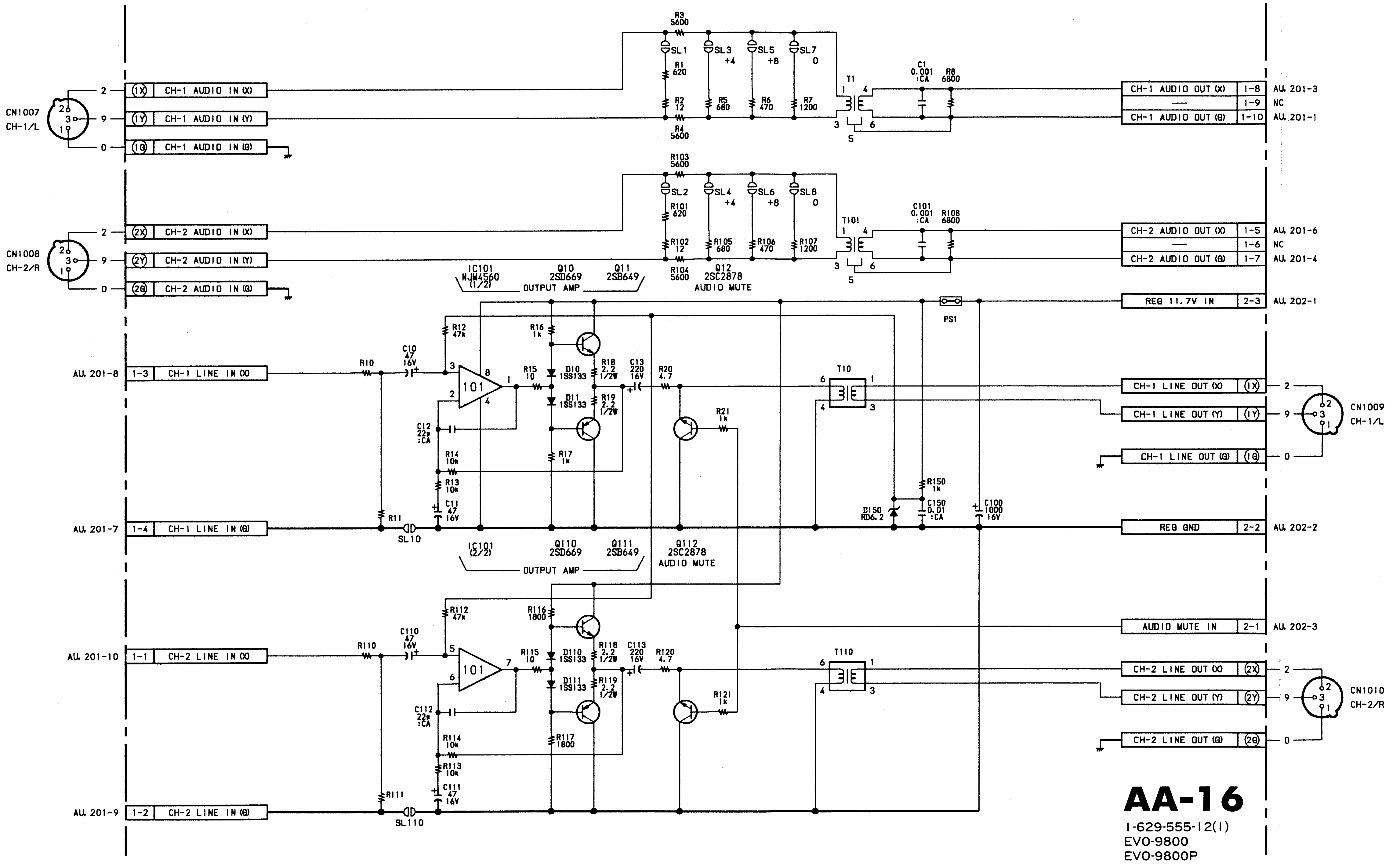


DI-11 COMPONENT SIDE
1-631-802-15(1)
EVO-9800



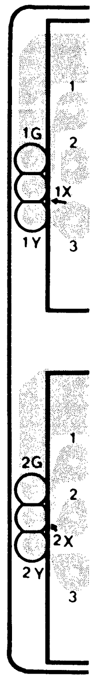
DI-11 SOLDERING SIDE
1-631-802-15(1)
EVO-9800

AA-16; XLR INPUT/OUTPUT AMPLIFIER

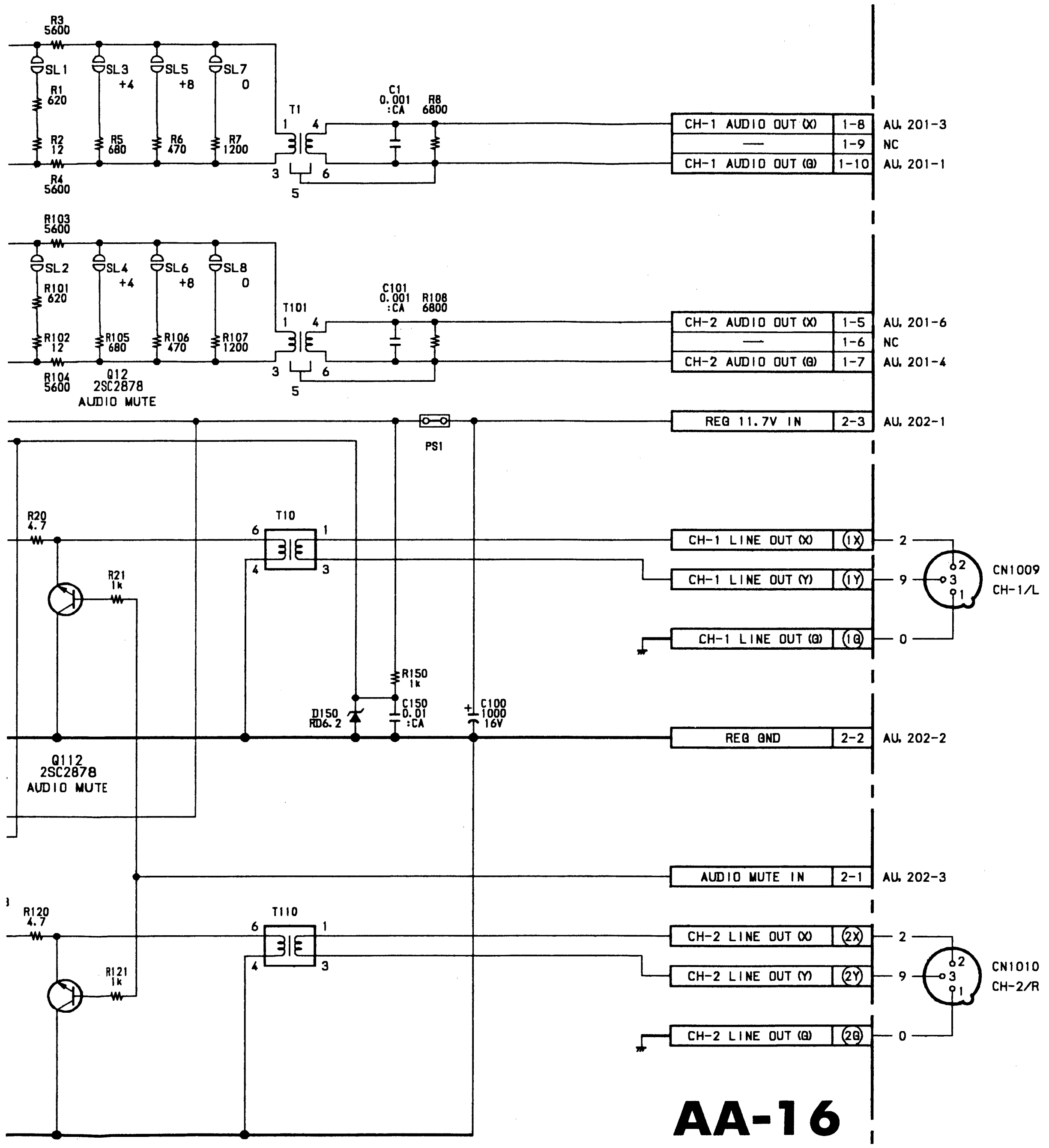

CN1007
CH-1/L
CH-1 AUDIO IN (X)
CH-1 AUDIO IN (Y)
CH-1 AUDIO IN (G)
CN1008
CH-2/R
CH-2 AUDIO IN (X)
CH-2 AUDIO IN (Y)
CH-2 AUDIO IN (G)
R3 5600
SL1
SL3 +4
SL5 +8
SL7 0
R1 620
R2 12
R4 5600
R5 680
R6 470
R7 1200
T1
C1 0.001 :CA
R8 6800
R103 5600
SL2
SL4 +4
SL6 +8
SL8 0
R101 620
R102 12
R104 5600
R105 680
R106 470
R107 1200
T101
C101 0.001 :CA
R108 6800
CH-1 AUDIO OUT (X) 1-8 AU 201-3
— 1-9 NC
CH-1 AUDIO OUT (G) 1-10 AU 201-1
CH-2 AUDIO OUT (X) 1-5 AU 201-6
— 1-6 NC
CH-2 AUDIO OUT (G) 1-7 AU 201-4
IC101 NJM4560 (1/2)
Q10 2SD669
Q11 2SB649
OUTPUT AMP
Q12 2SC2878 AUDIO MUTE
REG 11.7V IN 2-3 AU 202-1
PS1
AU 201-8 1-3 CH-1 LINE IN (X)
AU 201-7 1-4 CH-1 LINE IN (G)
R10
C10 47 16V
R12 47k
R16 1k
R15 10
D10 1SS133
D11 1SS133
R18 2.2 1/2W
R19 2.2 1/2W
C13 220 16V
R20 4.7
R21 1k
T10
C12 22p :CA
R14 10k
R13 10k
R17 1k
C11 47 16V
R11
SL10
R150 1k
D150 RD6.2
C150 0.01 :CA
C100 1000 16V
CH-1 LINE OUT (X) (1X)
CH-1 LINE OUT (Y) (1Y)
CH-1 LINE OUT (G) (1G)
CN1009
CH-1/L
REG GND 2-2 AU 202-2
IC101 (2/2)
Q110 2SD669
Q111 2SB649
OUTPUT AMP
Q112 2SC2878 AUDIO MUTE
AUDIO MUTE IN 2-1 AU 202-3
AU 201-10 1-1 CH-2 LINE IN (X)
AU 201-9 1-2 CH-2 LINE IN (G)
R110
C110 47 16V
R112 47k
R116 1800
R115 10
D110 1SS133
D111 1SS133
R118 2.2 1/2W
R119 2.2 1/2W
C113 220 16V
R120 4.7
R121 1k
T110
C112 22p :CA
R114 10k
R113 10k
R117 1800
C111 47 16V
R111
SL110
CH-2 LINE OUT (X) (2X)
CH-2 LINE OUT (Y) (2Y)
CH-2 LINE OUT (G) (2G)
CN1010
CH-2/R

AA-16

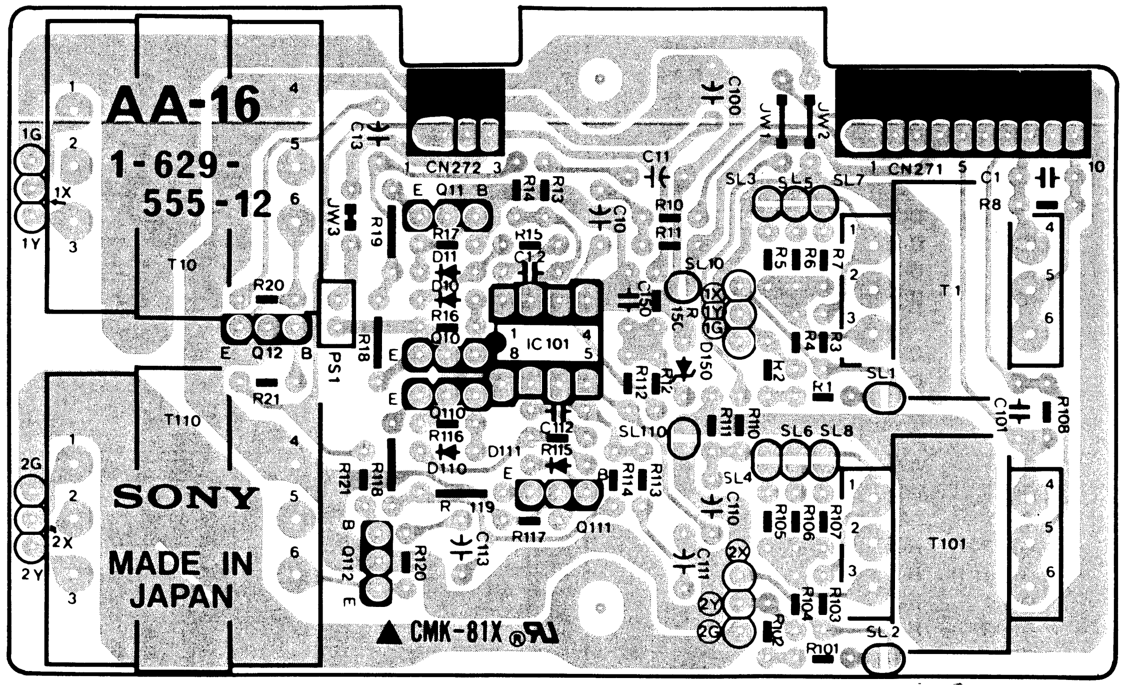
1-629-555-12(1)
EVO-9800
EVO-9800P


1G
1X
1Y
2G
2X
2Y

AA-16 ; XLR INPUT/OUTPUT AMPLIFIER


R3 5600
SL1
SL3 +4
SL5 +8
SL7 0
R1 620
R2 12
R5 680
R6 470
R7 1200
R4 5600
T1
C1 0.001 :CA
R8 6800
CH-1 AUDIO OUT (X) 1-8 AU, 201-3
— 1-9 NC
CH-1 AUDIO OUT (G) 1-10 AU, 201-1
R103 5600
SL2
SL4 +4
SL6 +8
SL8 0
R101 620
R102 12
R105 680
R106 470
R107 1200
R104 5600
Q12 2SC2878 AUDIO MUTE
T101
C101 0.001 :CA
R108 6800
CH-2 AUDIO OUT (X) 1-5 AU, 201-6
— 1-6 NC
CH-2 AUDIO OUT (G) 1-7 AU, 201-4
PS1
REG 11.7V IN 2-3 AU, 202-1
R20 4.7
R21 1k
T10
CH-1 LINE OUT (X) (1X)
CH-1 LINE OUT (Y) (1Y)
CH-1 LINE OUT (G) (1G)
CN1009 CH-1/L
R150 1k
D150 RD6.2
C150 0.01 :CA
C100 1000 16V
REG GND 2-2 AU, 202-2
Q112 2SC2878 AUDIO MUTE
AUDIO MUTE IN 2-1 AU, 202-3
R120 4.7
R121 1k
T110
CH-2 LINE OUT (X) (2X)
CH-2 LINE OUT (Y) (2Y)
CH-2 LINE OUT (G) (2G)
CN1010 CH-2/R

AA-16
1-629-555-12(1)
EVO-9800
EVO-9800P


AA-16
1-629-555-12
SONY
MADE IN JAPAN
CMK-81X
CN272
CN271
IC101
T1
T101
T10
T110
Q11
Q12
Q110
Q111
Q112
PS1
JW1
JW2
JW3
SL1
SL2
SL3
SL5
SL6
SL7
SL8
SL10
SL110
D150
1G
1X
1Y
2G
2X
2Y

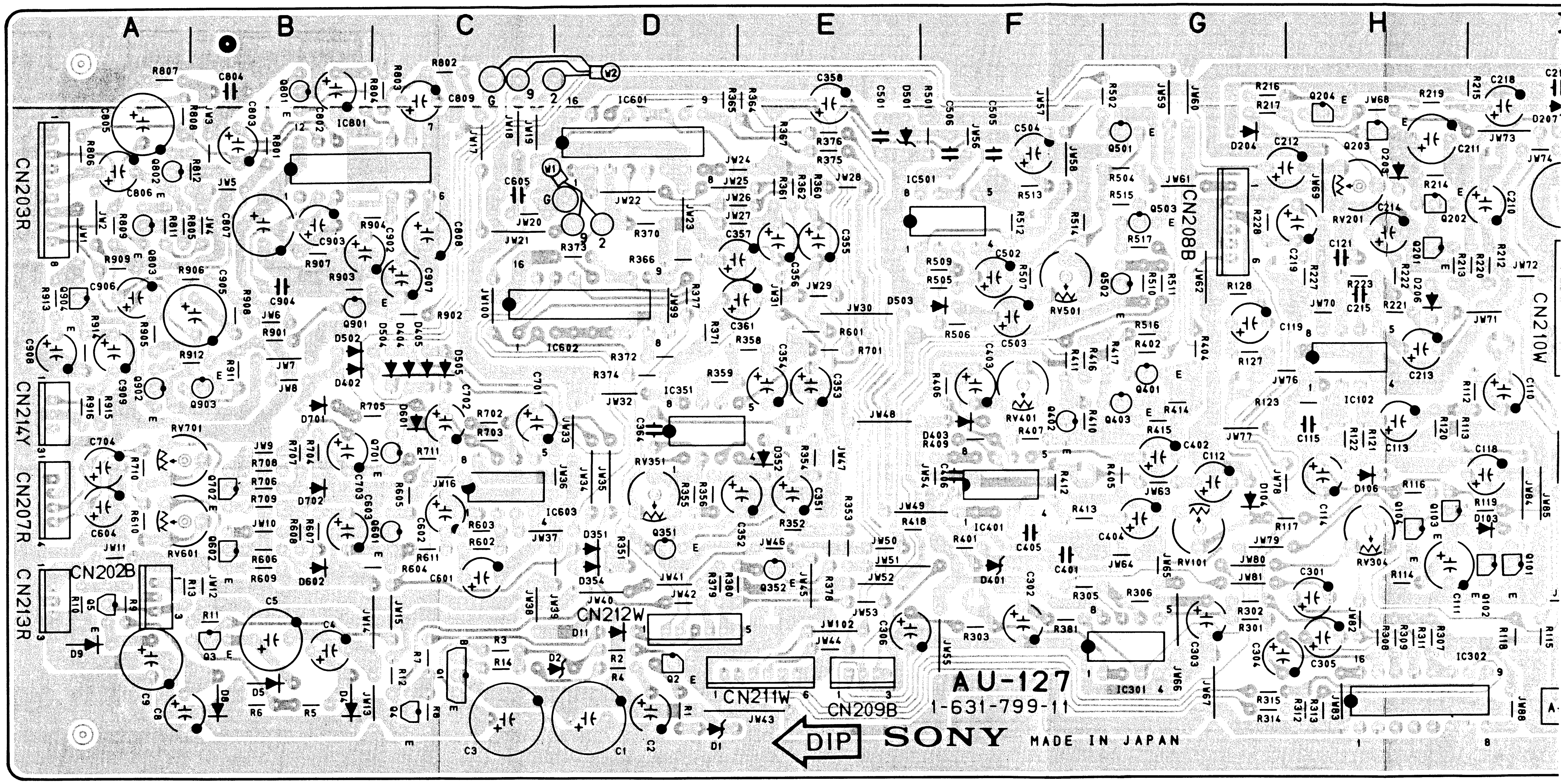
AA-16 —COMPONENT SIDE—
1-629-555-12(1)
EVO-9800
EVO-9800P

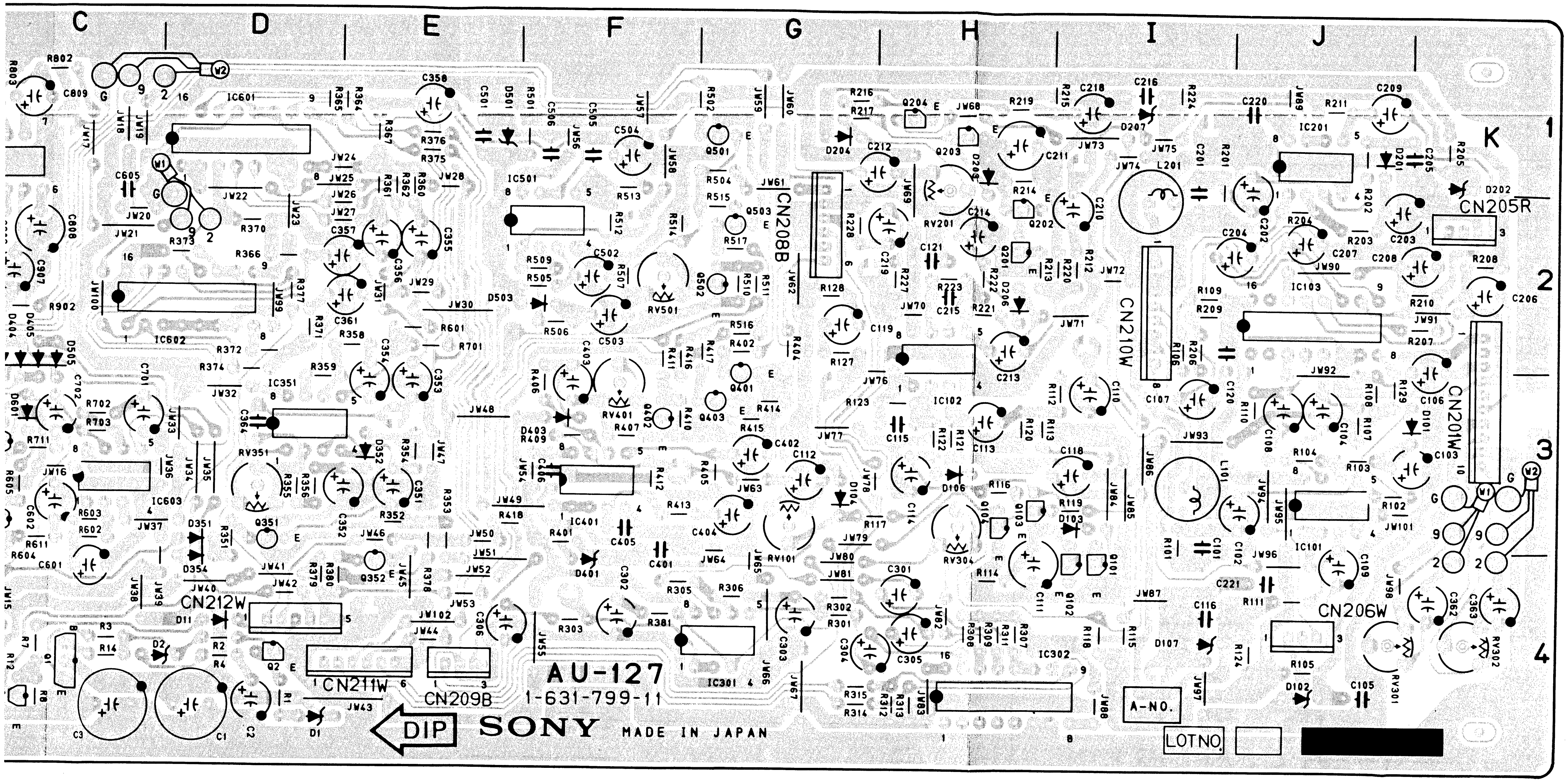
AU-127; AUDIO REC/PB AMPLIFIER

AU-127(1-631-799-11,12) C

CN201	K-3
CN202	A-4
CN203	A-1
CN205	K-2
CN206	J-4
CN207	A-3
CN208	G-2
CN209	E-4
CN210	I-2
CN211	E-4
CN212	D-4
CN213	A-4
CN214	A-3
D1	D-4
D2	C-4
D4	B-4
D5	B-4
D8	B-4
D9	A-4
D11	D-4
D101	K-3
D102	J-4
D103	I-3
D104	G-3
D106	H-3
D107	I-4
D201	J-1
D202	K-1
D203	H-1
D204	G-1
D206	H-2
D207	I-1
D351	D-3
D352	E-3
D354	D-4
D401	F-4
D402	B-3
D403	F-3
D404	C-2
D405	C-2
D501	E-1
D502	B-2
D503	E-2
D504	C-2
D505	C-2
D601	C-3
D602	B-4
D701	B-3
D702	B-3
E1	C-1S
E2	E-4S
E3	I-1S
E4	I-4S
IC101	J-3
IC102	H-3
IC103	J-2
IC201	J-1
IC301	G-4
IC302	I-4
IC351	D-3
IC401	F-3
IC501	F-1
IC601	D-1
IC602	D-2
IC603	D-3
IC801	B-1
Q1	C-4
Q2	D-4
Q3	B-4
Q4	C-4
Q5	A-4
Q101	I-4
Q102	I-4
Q103	H-3
Q104	H-3
Q201	H-2
Q202	H-2
Q203	H-1
Q204	H-1
Q351	D-3
Q352	E-4
Q401	G-3
Q402	F-3
Q403	G-3
Q501	G-1
Q502	G-2
Q503	G-2
Q601	C-3
Q602	B-3
Q701	C-3
Q702	B-3
Q801	B-1
Q802	A-1
Q803	A-2
Q902	A-3
Q903	B-3
Q904	A-2
RV101	G-4
RV201	H-2
RV301	J-4
RV302	K-4
RV304	H-4
RV351	D-3
RV401	F-3
RV501	F-2
RV601	A-4
RV701	A-3
TP101	I-2S
TP102	G-3S
TP201	I-1S
TP202	G-2S
TP301	F-4S
TP351	E-3S
TP401	F-3S
TP501	F-2S

S: SOLDERING SIDE


A
B
C
D
E
F
G
H
CN203R
CN214Y
CN207R
CN213R
CN202B
CN212W
CN211W
CN209B
CN208B
CN210W
IC601
IC801
IC602
IC603
IC351
IC501
IC401
IC102
IC301
IC302
RV701
RV601
RV351
RV501
RV401
RV201
RV101
RV304
AU-127
1-631-799-11
DIP
SONY
MADE IN JAPAN


C
D
E
F
G
H
I
J
K
1
2
3
4
IC601
IC602
IC603
IC351
IC501
IC401
IC301
IC302
IC102
IC103
IC101
IC201
CN208B
CN210W
CN205R
CN201W
CN206W
CN212W
CN211W
CN209B
RV351
RV401
RV501
RV101
RV201
RV304
RV301
RV302
L201
L101
AU-127
1-631-799-11
DIP
SONY
MADE IN JAPAN
A-NO.
LOTNO.

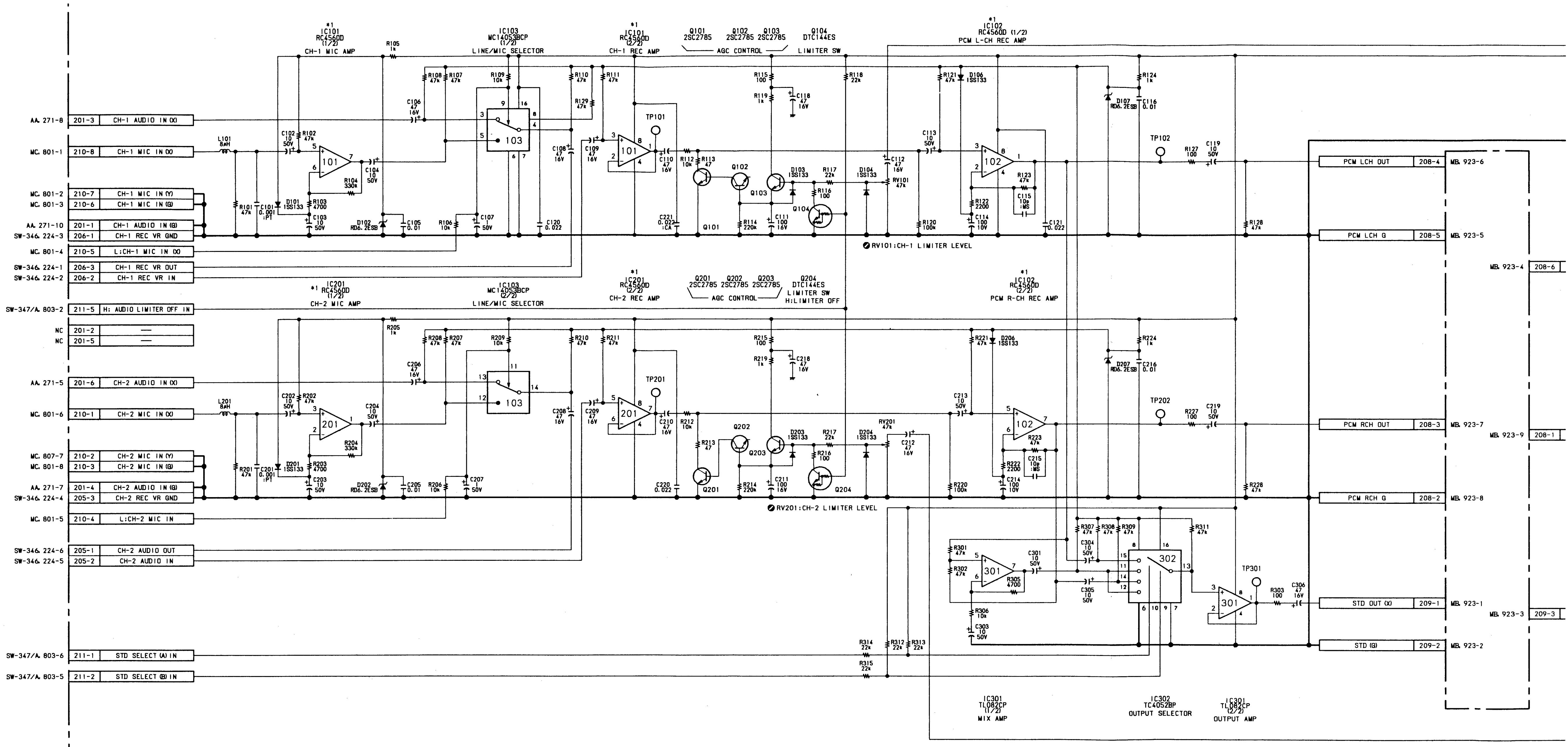
AU-127 —COMPONENT SIDE—

1-631-799-11, 12(1)

EVO-9800

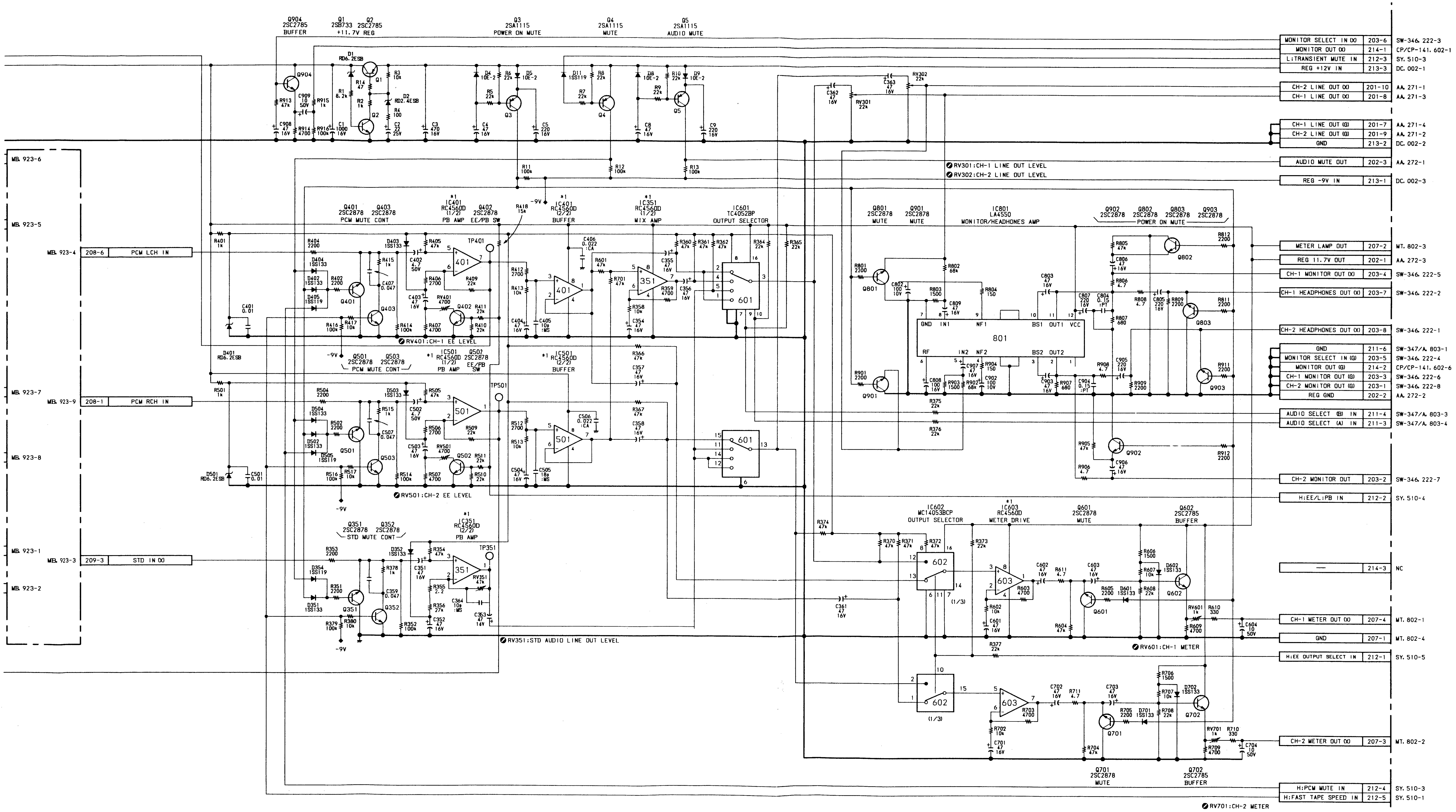
EVO-9800P

AU-127; AUDIO REC/PB AMPLIFIER


AA. 271-8
201-3
CH-1 AUDIO IN (X)
MC. 801-1
210-8
CH-1 MIC IN (X)
MC. 801-2
210-7
CH-1 MIC IN (Y)
MC. 801-3
210-6
CH-1 MIC IN (G)
AA. 271-10
201-1
CH-1 AUDIO IN (G)
SW-346. 224-3
206-1
CH-1 REC VR GND
MC. 801-4
210-5
L:CH-1 MIC IN (X)
SW-346. 224-1
206-3
CH-1 REC VR OUT
SW-346. 224-2
206-2
CH-1 REC VR IN
SW-347/A. 803-2
211-5
H: AUDIO LIMITER OFF IN
NC
201-2
NC
201-5
AA. 271-5
201-6
CH-2 AUDIO IN (X)
MC. 801-6
210-1
CH-2 MIC IN (X)
MC. 807-7
210-2
CH-2 MIC IN (Y)
MC. 801-8
210-3
CH-2 MIC IN (G)
AA. 271-7
201-4
CH-2 AUDIO IN (G)
SW-346. 224-4
205-3
CH-2 REC VR GND
MC. 801-5
210-4
L:CH-2 MIC IN
SW-346. 224-6
205-1
CH-2 AUDIO OUT
SW-346. 224-5
205-2
CH-2 AUDIO IN
SW-347/A. 803-6
211-1
STD SELECT (A) IN
SW-347/A. 803-5
211-2
STD SELECT (B) IN
*1 IC101 RC4560D (1/2) CH-1 MIC AMP
IC103 MC14053BCP (1/2) LINE/MIC SELECTOR
*1 IC101 RC4560D (2/2) CH-1 REC AMP
Q101 2SC2785
Q102 2SC2785
Q103 2SC2785
AGC CONTROL
Q104 DTC144ES
LIMITER SW
*1 IC102 RC4560D (1/2) PCM L-CH REC AMP
*1 IC201 RC4560D (1/2) CH-2 MIC AMP
IC103 MC14053BCP (2/2) LINE/MIC SELECTOR
*1 IC201 RC4560D (2/2) CH-2 REC AMP
Q201 2SC2785
Q202 2SC2785
Q203 2SC2785
AGC CONTROL
Q204 DTC144ES
LIMITER SW
H:LIMITER OFF
*1 IC102 RC4560D (2/2) PCM R-CH REC AMP
101
103
102
201
301
302
TP101
TP102
TP201
TP202
TP301
L101 8µH
L201 8µH
RV101:CH-1 LIMITER LEVEL
RV201:CH-2 LIMITER LEVEL
PCM LCH OUT
208-4
MB. 923-6
PCM LCH G
208-5
MB. 923-5
MB. 923-4
208-6
PCM RCH OUT
208-3
MB. 923-7
MB. 923-9
208-1
PCM RCH G
208-2
MB. 923-8
R303 100
C306 47 16V
STD OUT (X)
209-1
MB. 923-1
MB. 923-3
209-3
STD (G)
209-2
MB. 923-2
IC301 TL082CP (1/2) MIX AMP
IC302 TC4052BP OUTPUT SELECTOR
IC301 TL082CP (2/2) OUTPUT AMP

NOTE;

MARK	CHANGE INFORMATION	SERIAL NO
*1	IC101. 102. 210. 351. 401 501. 603 CHANGED NJM4562D → RC4560D	J:10481- UC:11871- EK:11701-

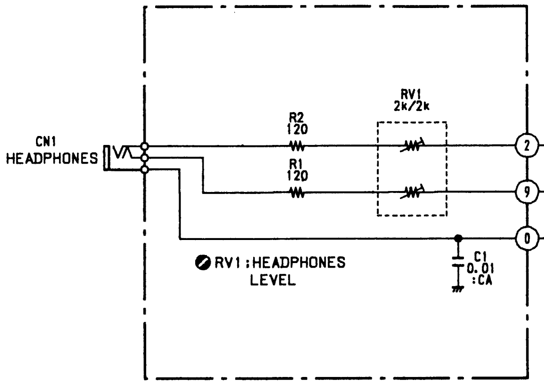

Q904 2SC2785 BUFFER
Q1 2SB733 Q2 2SC2785 +11.7V REG
Q3 2SA1115 POWER ON MUTE
Q4 2SA1115 MUTE
Q5 2SA1115 AUDIO MUTE
MONITOR SELECT IN (X) 203-6 SW-346, 222-3
MONITOR OUT (X) 214-1 CP/CP-141, 602-1
L:TRANSIENT MUTE IN 212-3 SY, 510-3
REG +12V IN 213-3 DC, 002-1
CH-2 LINE OUT (X) 201-10 AA, 271-1
CH-1 LINE OUT (X) 201-8 AA, 271-3
CH-1 LINE OUT (G) 201-7 AA, 271-4
CH-2 LINE OUT (G) 201-9 AA, 271-2
GND 213-2 DC, 002-2
AUDIO MUTE OUT 202-3 AA, 272-1
REG -9V IN 213-1 DC, 002-3
RV301:CH-1 LINE OUT LEVEL
RV302:CH-2 LINE OUT LEVEL
MB, 923-6
MB, 923-5
MB, 923-4 208-6 PCM LCH IN
MB, 923-7
MB, 923-9 208-1 PCM RCH IN
MB, 923-8
MB, 923-1
MB, 923-3 209-3 STD IN (X)
MB, 923-2
Q401 2SC2878 Q403 2SC2878 PCM MUTE CONT
IC401 RC4560D (1/2) PB AMP
Q402 2SC2878 EE/PB SW
IC401 RC4560D (2/2) BUFFER
IC351 RC4560D (1/2) MIX AMP
IC601 TC4052BP OUTPUT SELECTOR
RV401:CH-1 EE LEVEL
Q501 2SC2878 Q503 2SC2878 PCM MUTE CONT
IC501 RC4560D (1/2) PB AMP
Q502 2SC2878 EE/PB SW
IC501 RC4560D (2/2) BUFFER
RV501:CH-2 EE LEVEL
Q351 2SC2878 Q352 2SC2878 STD MUTE CONT
IC351 RC4560D (2/2) PB AMP
RV351:STD AUDIO LINE OUT LEVEL
Q801 2SC2878 MUTE
Q901 2SC2878 MUTE
IC801 LA4550 MONITOR/HEADHONES AMP
Q902 2SC2878 Q802 2SC2878 Q803 2SC2878 Q903 2SC2878 POWER ON MUTE
METER LAMP OUT 207-2 MT, 802-3
REG 11.7V OUT 202-1 AA, 272-3
CH-1 MONITOR OUT (X) 203-4 SW-346, 222-5
CH-1 HEADPHONES OUT (X) 203-7 SW-346, 222-2
CH-2 HEADPHONES OUT (X) 203-8 SW-346, 222-1
GND 211-6 SW-347/A, 803-1
MONITOR SELECT IN (G) 203-5 SW-346, 222-4
MONITOR OUT (G) 214-2 CP/CP-141, 602-6
CH-1 MONITOR OUT (G) 203-3 SW-346, 222-6
CH-2 MONITOR OUT (G) 203-1 SW-346, 222-8
REG GND 202-2 AA, 272-2
AUDIO SELECT (B) IN 211-4 SW-347/A, 803-3
AUDIO SELECT (A) IN 211-3 SW-347/A, 803-4
CH-2 MONITOR OUT 203-2 SW-346, 222-7
H:EE/L:PB IN 212-2 SY, 510-4
IC602 MC14053BCP OUTPUT SELECTOR
IC603 RC4560D METER DRIVE
Q601 2SC2878 MUTE
Q602 2SC2785 BUFFER
— 214-3 NC
CH-1 METER OUT (X) 207-4 MT, 802-1
GND 207-1 MT, 802-4
RV601:CH-1 METER
H:EE OUTPUT SELECT IN 212-1 SY, 510-5
CH-2 METER OUT (X) 207-3 MT, 802-2
Q701 2SC2878 MUTE
Q702 2SC2785 BUFFER
H:PCM MUTE IN 212-4 SY, 510-3
H:FAST TAPE SPEED IN 212-5 SY, 510-1
RV701:CH-2 METER

AU-127

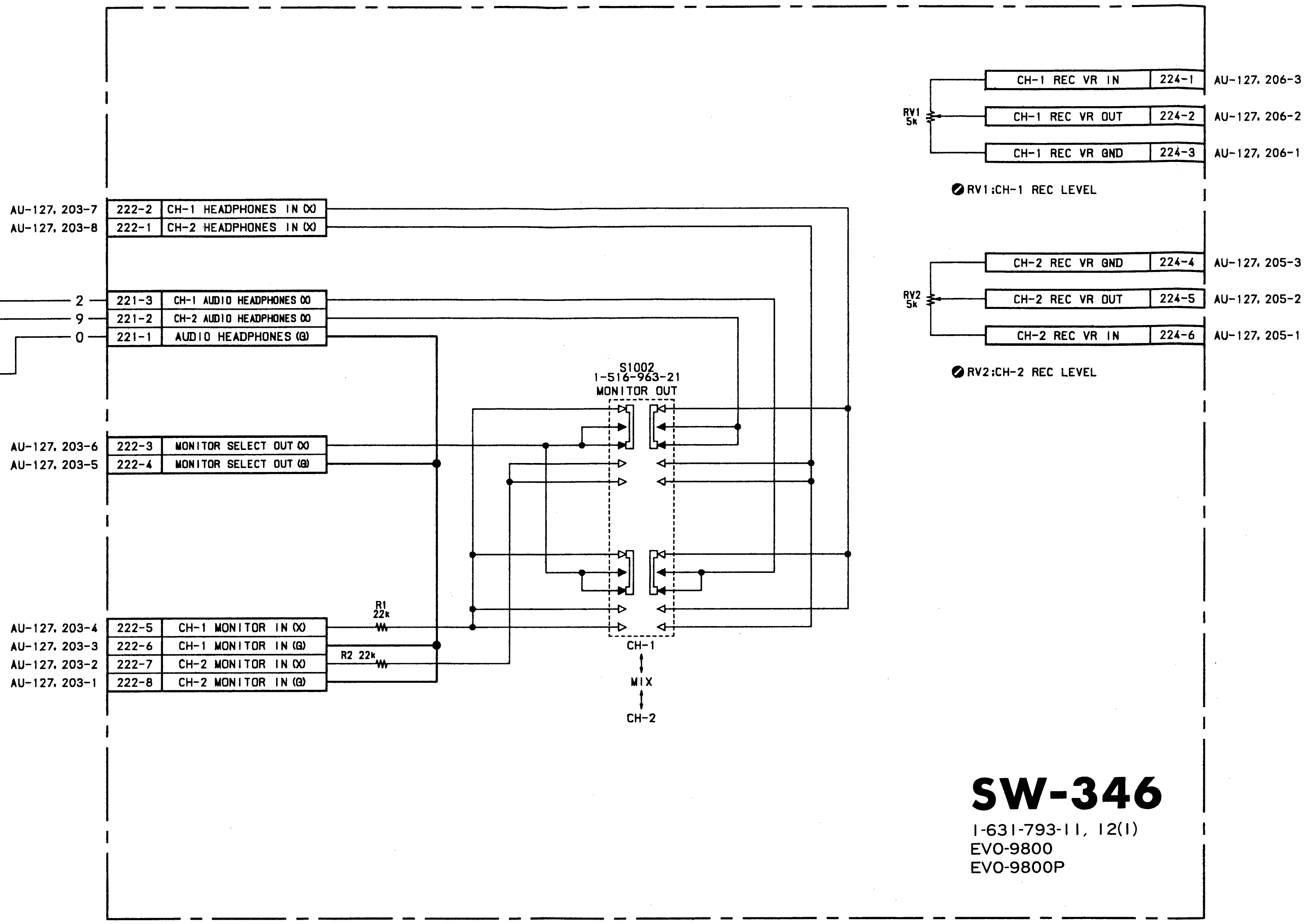
1-631-799-11, 12(2)
EVO-9800
EVO-9800P

HP-42; HEADPHONES LEVEL CONTROL
SW-346; AUDIO LEVEL CONTROL
MC-28; MICROPHONES JACK
MT-57; AUDIO LEVEL METER

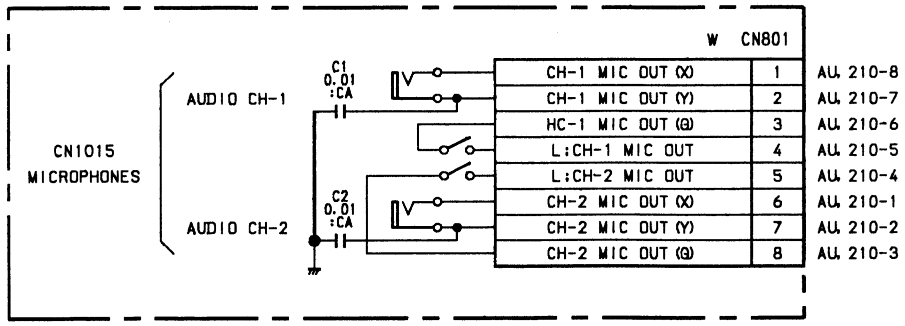
HP-42; HEADPHO
SW-346; AUDIO L
MC-28; MICROPH
MT-57; AUDIO LE


CN1
HEADPHONES
R2
120
R1
120
RV1
2k/2k
C1
0.01
:CA
RV1:HEADPHONES LEVEL
2
9
0

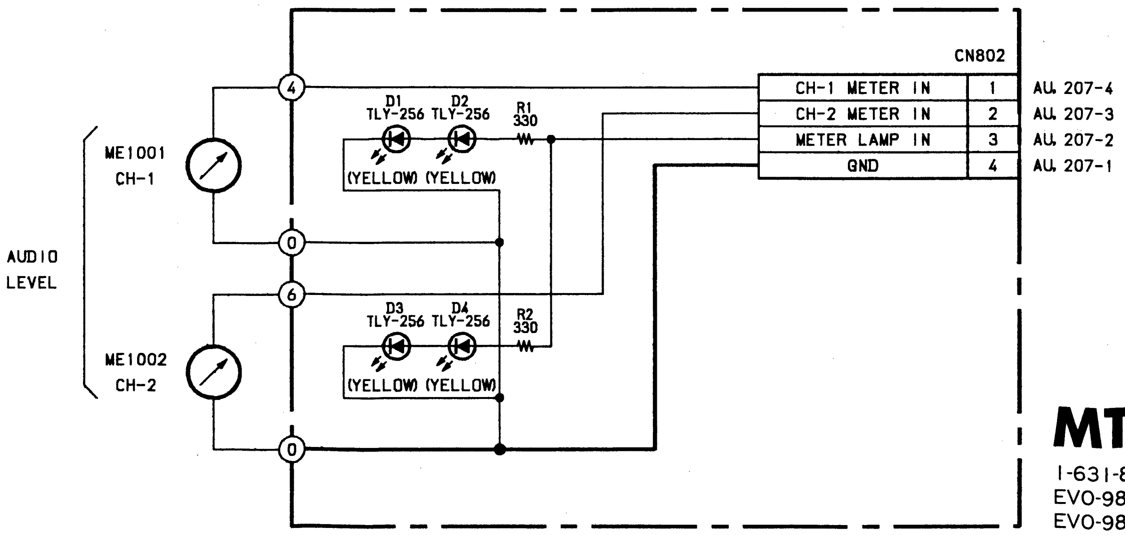
HP-42
1-629-477-11(1)
EVO-9800
EVO-9800P


AU-127, 203-7
AU-127, 203-8
222-2 CH-1 HEADPHONES IN (X)
222-1 CH-2 HEADPHONES IN (X)
2
9
0
221-3 CH-1 AUDIO HEADPHONES (X)
221-2 CH-2 AUDIO HEADPHONES (X)
221-1 AUDIO HEADPHONES (G)
AU-127, 203-6
AU-127, 203-5
222-3 MONITOR SELECT OUT (X)
222-4 MONITOR SELECT OUT (G)
AU-127, 203-4
AU-127, 203-3
AU-127, 203-2
AU-127, 203-1
222-5 CH-1 MONITOR IN (X)
222-6 CH-1 MONITOR IN (G)
222-7 CH-2 MONITOR IN (X)
222-8 CH-2 MONITOR IN (G)
R1
22k
R2 22k
S1002
1-516-963-21
MONITOR OUT
CH-1
MIX
CH-2
RV1
5k
CH-1 REC VR IN 224-1 AU-127, 206-3
CH-1 REC VR OUT 224-2 AU-127, 206-2
CH-1 REC VR GND 224-3 AU-127, 206-1
RV1:CH-1 REC LEVEL
RV2
5k
CH-2 REC VR GND 224-4 AU-127, 205-3
CH-2 REC VR OUT 224-5 AU-127, 205-2
CH-2 REC VR IN 224-6 AU-127, 205-1
RV2:CH-2 REC LEVEL

SW-346
1-631-793-11, 12(1)
EVO-9800
EVO-9800P

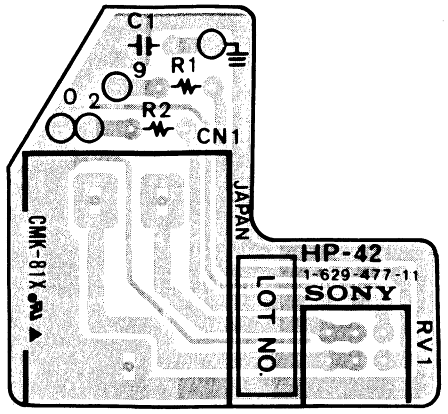

W CN801
CN1015
MICROPHONES
AUDIO CH-1
AUDIO CH-2
C1
0.01
:CA
C2
0.01
:CA
CH-1 MIC OUT (X) 1 AU, 210-8
CH-1 MIC OUT (Y) 2 AU, 210-7
HC-1 MIC OUT (G) 3 AU, 210-6
L:CH-1 MIC OUT 4 AU, 210-5
L:CH-2 MIC OUT 5 AU, 210-4
CH-2 MIC OUT (X) 6 AU, 210-1
CH-2 MIC OUT (Y) 7 AU, 210-2
CH-2 MIC OUT (G) 8 AU, 210-3

MC-28
1-622-222-11(1)
EVO-9800
EVO-9800P

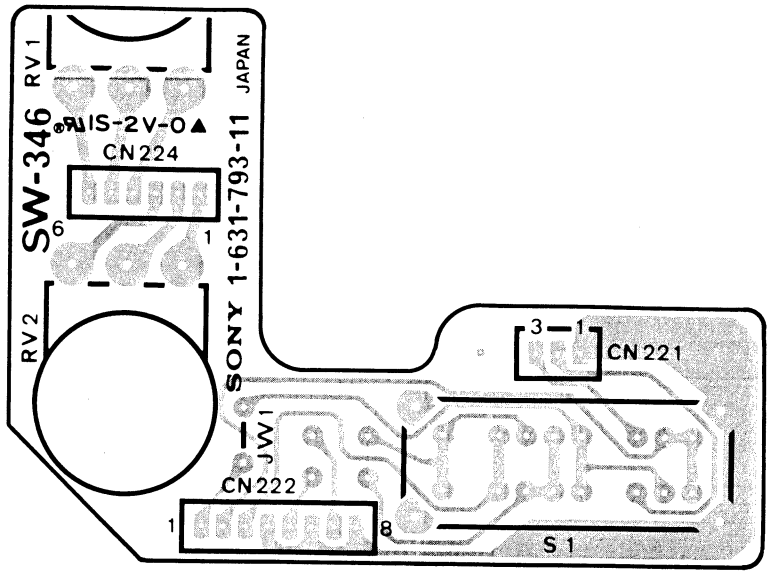

CN802
CH-1 METER IN 1 AU, 207-4
CH-2 METER IN 2 AU, 207-3
METER LAMP IN 3 AU, 207-2
GND 4 AU, 207-1
ME1001
CH-1
ME1002
CH-2
AUDIO LEVEL
D1
TLY-256
D2
TLY-256
R1
330
(YELLOW) (YELLOW)
D3
TLY-256
D4
TLY-256
R2
330
(YELLOW) (YELLOW)
4
0
6
0

MT-57
1-631-806-11(1)
EVO-9800
EVO-9800P

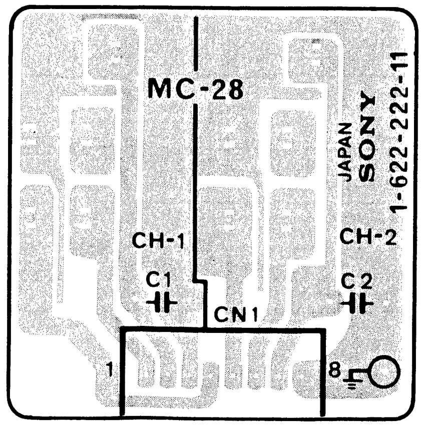
HP-42 ; HEADPHONES LEVEL CONTROL
SW-346 ; AUDIO LEVEL CONTROL
MC-28 ; MICROPHONES JACK
MT-57 ; AUDIO LEVEL METER


C1
9
R1
0
2
R2
CN1
JAPAN
CMK-81X
HP-42
1-629-477-11
SONY
LOT NO.
RV1

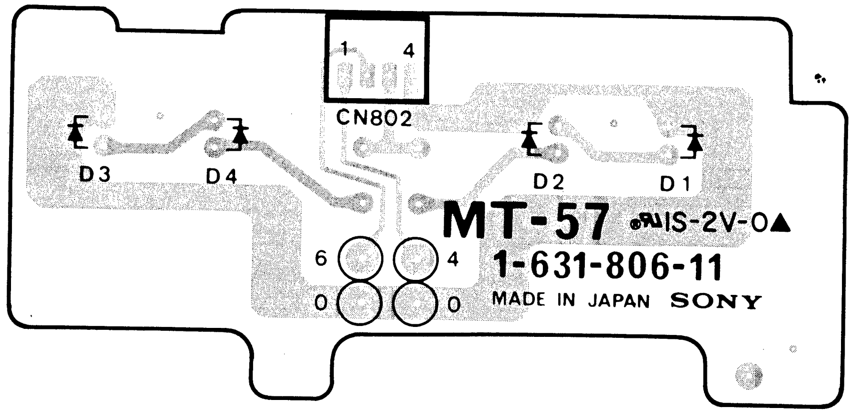
HP-42 —COMPONENT SIDE—
1-629-477-11(1)
EVO-9800
EVO-9800P


RV1
JAPAN
SW-346
IS-2V-0▲
CN224
6
1
1-631-793-11
RV2
SONY
3
1
CN221
JW1
CN222
1
8
S1

SW-346 —SOLDERING SIDE—
1-631-793-11, 12(1)
EVO-9800
EVO-9800P

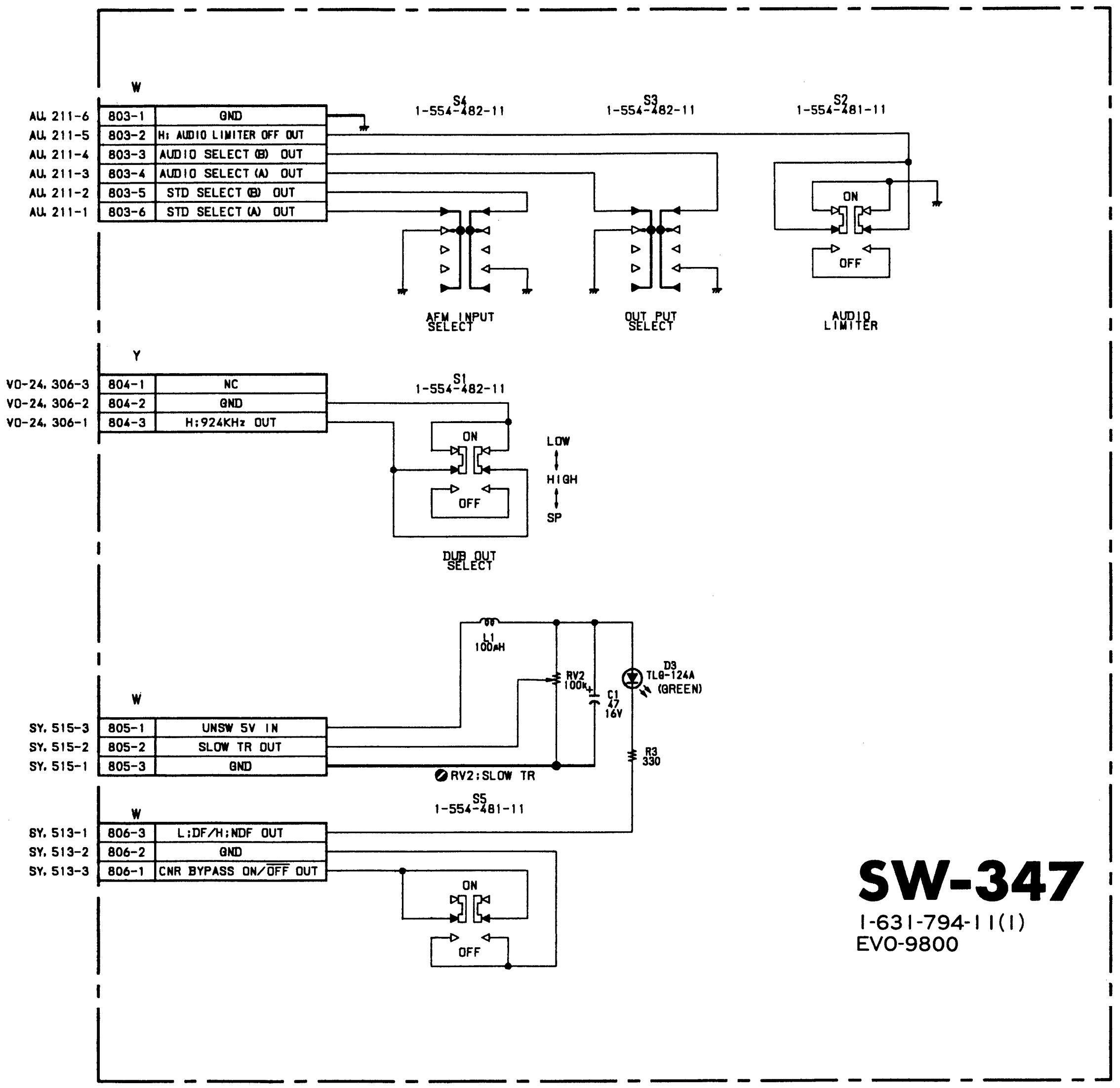

MC-28
JAPAN
SONY
1-622-222-11
CH-1
CH-2
C1
C2
CN1
1
8

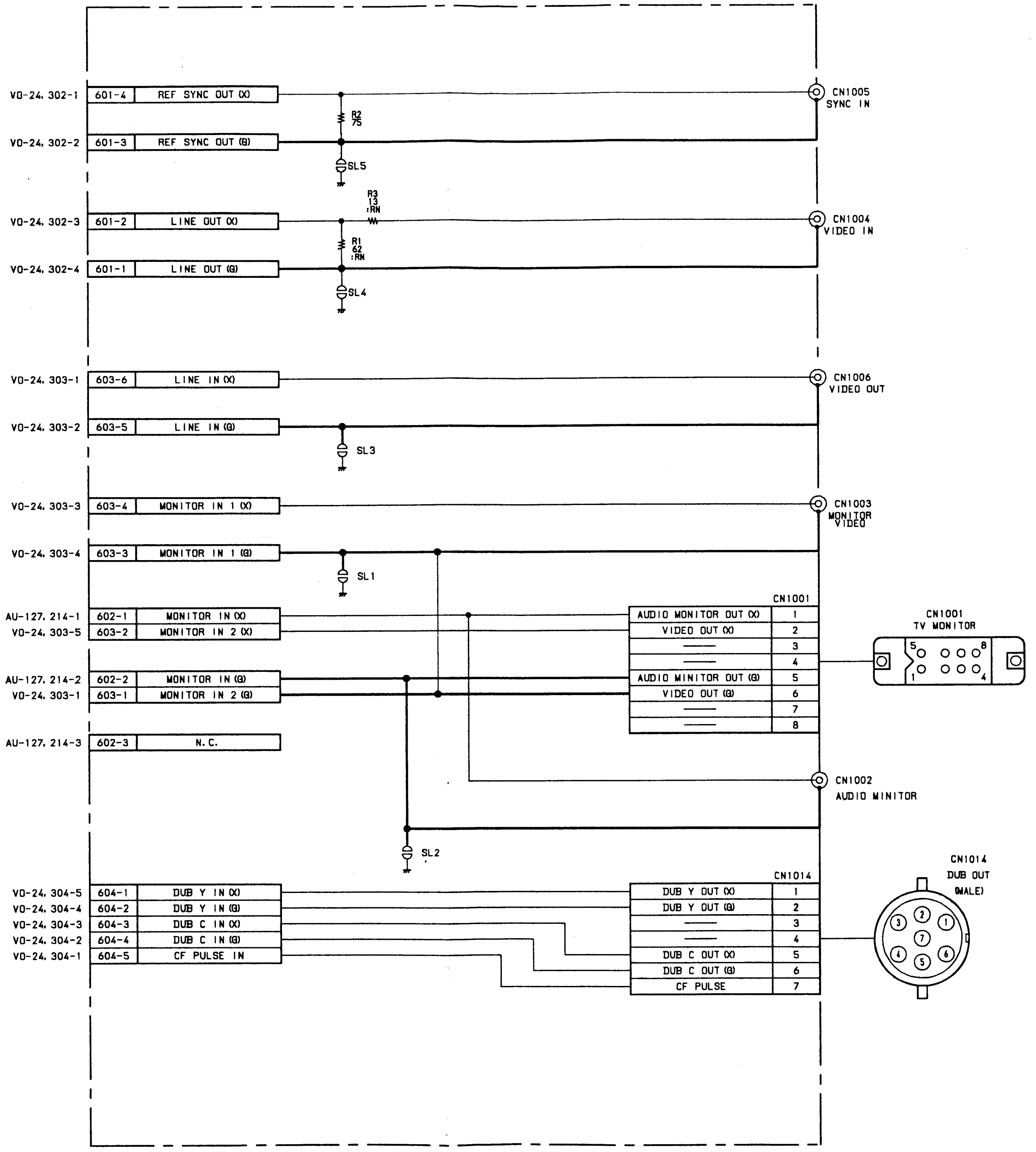
MC-28 —COMPONENT SIDE—
1-622-222-11(1)
EVO-9800
EVO-9800P


1
4
CN802
D3
D4
D2
D1
MT-57
IS-2V-0▲
6
4
0
0
1-631-806-11
MADE IN JAPAN
SONY

MT-57 —SOLDERING SIDE—
1-631-806-11(1)
EVO-9800
EVO-9800P

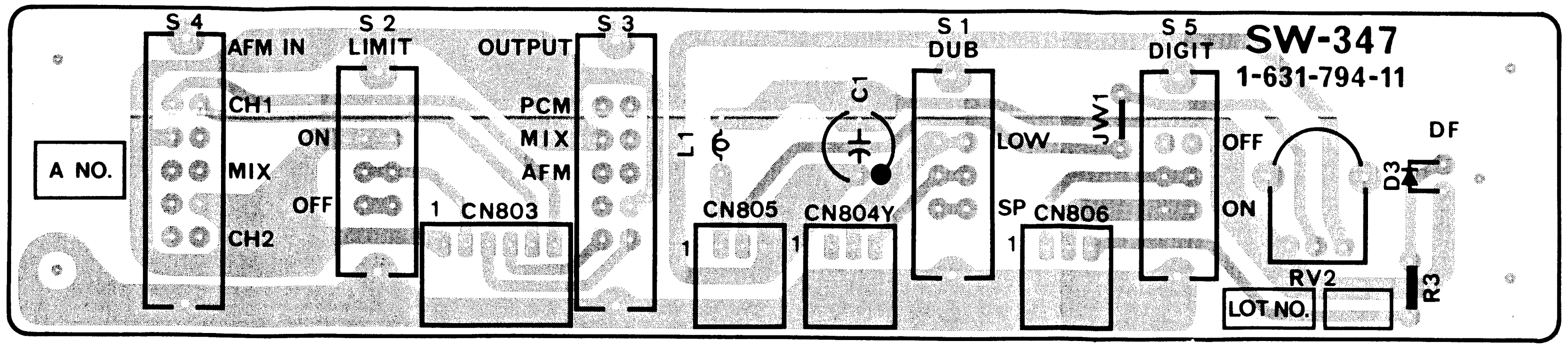
SW-347; AUDIO SELECT SWITCH
CP-141; CONNECTOR PANEL


W
AU. 211-6
AU. 211-5
AU. 211-4
AU. 211-3
AU. 211-2
AU. 211-1
803-1 GND
803-2 H; AUDIO LIMITER OFF OUT
803-3 AUDIO SELECT (B) OUT
803-4 AUDIO SELECT (A) OUT
803-5 STD SELECT (B) OUT
803-6 STD SELECT (A) OUT
S4 1-554-482-11
S3 1-554-482-11
S2 1-554-481-11
ON
OFF
AFM INPUT SELECT
OUT PUT SELECT
AUDIO LIMITER
Y
VO-24. 306-3
VO-24. 306-2
VO-24. 306-1
804-1 NC
804-2 GND
804-3 H;924KHz OUT
S1 1-554-482-11
ON
OFF
LOW
HIGH
SP
DUB OUT SELECT
L1 100μH
RV2 100k
C1 47 16V
D3 TLG-124A (GREEN)
R3 330
W
SY. 515-3
SY. 515-2
SY. 515-1
805-1 UNSW 5V IN
805-2 SLOW TR OUT
805-3 GND
RV2;SLOW TR
S5 1-554-481-11
W
SY. 513-1
SY. 513-2
SY. 513-3
806-3 L;DF/H;NDF OUT
806-2 GND
806-1 CNR BYPASS ON/$\overline{\text{OFF}}$ OUT
ON
OFF
SW-347
1-631-794-11(1)
EVO-9800

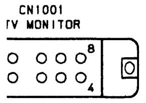

VO-24. 302-1
601-4 REF SYNC OUT (X)
VO-24. 302-2
601-3 REF SYNC OUT (G)
R2 75
SL5
CN1005 SYNC IN
VO-24. 302-3
601-2 LINE OUT (X)
VO-24. 302-4
601-1 LINE OUT (G)
R3 13 :RN
R1 62 :RN
SL4
CN1004 VIDEO IN
VO-24. 303-1
603-6 LINE IN (X)
VO-24. 303-2
603-5 LINE IN (G)
SL3
CN1006 VIDEO OUT
VO-24. 303-3
603-4 MONITOR IN 1 (X)
VO-24. 303-4
603-3 MONITOR IN 1 (G)
SL1
CN1003 MONITOR VIDEO
AU-127. 214-1
602-1 MONITOR IN (X)
VO-24. 303-5
603-2 MONITOR IN 2 (X)
AU-127. 214-2
602-2 MONITOR IN (G)
VO-24. 303-1
603-1 MONITOR IN 2 (G)
AU-127. 214-3
602-3 N.C.
CN1001
AUDIO MONITOR OUT (X) 1
VIDEO OUT (X) 2
3
4
AUDIO MINITOR OUT (G) 5
VIDEO OUT (G) 6
7
8
CN1001 TV MONITOR
5 8 1 4
CN1002 AUDIO MINITOR
SL2
VO-24. 304-5
VO-24. 304-4
VO-24. 304-3
VO-24. 304-2
VO-24. 304-1
604-1 DUB Y IN (X)
604-2 DUB Y IN (G)
604-3 DUB C IN (X)
604-4 DUB C IN (G)
604-5 CF PULSE IN
CN1014
DUB Y OUT (X) 1
DUB Y OUT (G) 2
3
4
DUB C OUT (X) 5
DUB C OUT (G) 6
CF PULSE 7
CN1014 DUB OUT (MALE)
1 2 3 4 5 6 7

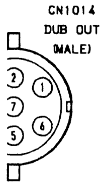
CP-141
1-631-807-11, 12(1)
EVO-9800

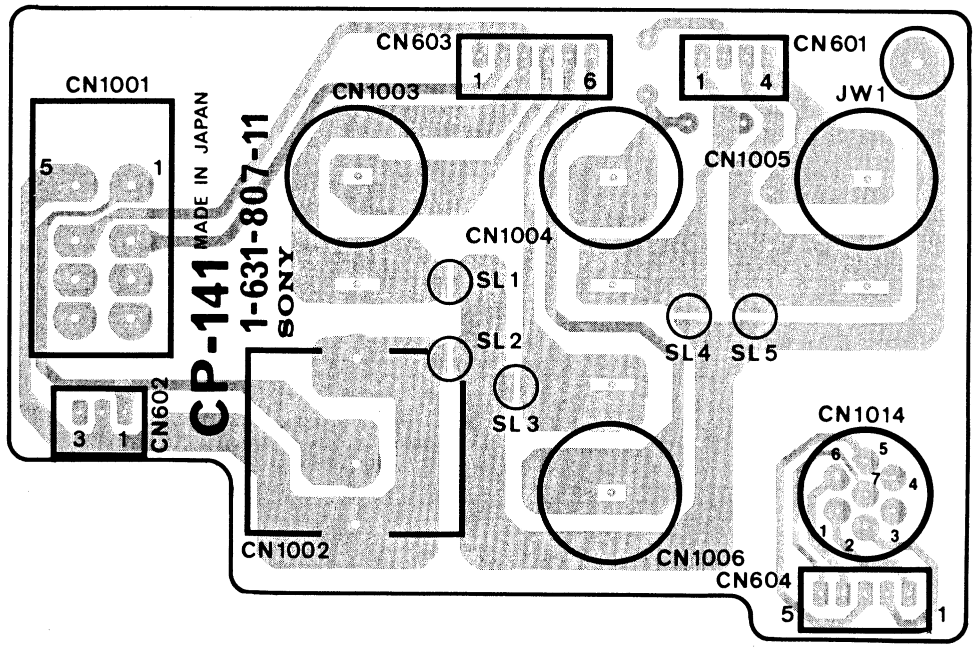
SW-347; AUDIO SELECT SWITCH
CP-141; CONNECTOR PANEL


S 4
AFM IN
CH1
MIX
CH2
A NO.
S 2
LIMIT
ON
OFF
OUTPUT
S 3
PCM
MIX
AFM
1 CN803
L1
C1
CN805
1
CN804Y
1
S 1
DUB
LOW
SP
CN806
1
JW1
S 5
DIGIT
OFF
ON
SW-347
1-631-794-11
DF
D3
RV2
R3
LOT NO.

SW-347 —COMPONENT SIDE—
1-631-794-11(1)
EVO-9800


CN1001
TV MONITOR
8
4


CN1014
DUB OUT
(MALE)
1
2
3
4
5
6


CN603
1
6
CN601
1
4
JW1
CN1001
5
1
CN1003
MADE IN JAPAN
CP-141
1-631-807-11
SONY
CN1005
CN1004
SL 1
SL 2
SL 3
SL 4
SL 5
CN602
3
1
CN1014
1
2
3
4
5
6
7
CN1002
CN1006
CN604
5
1

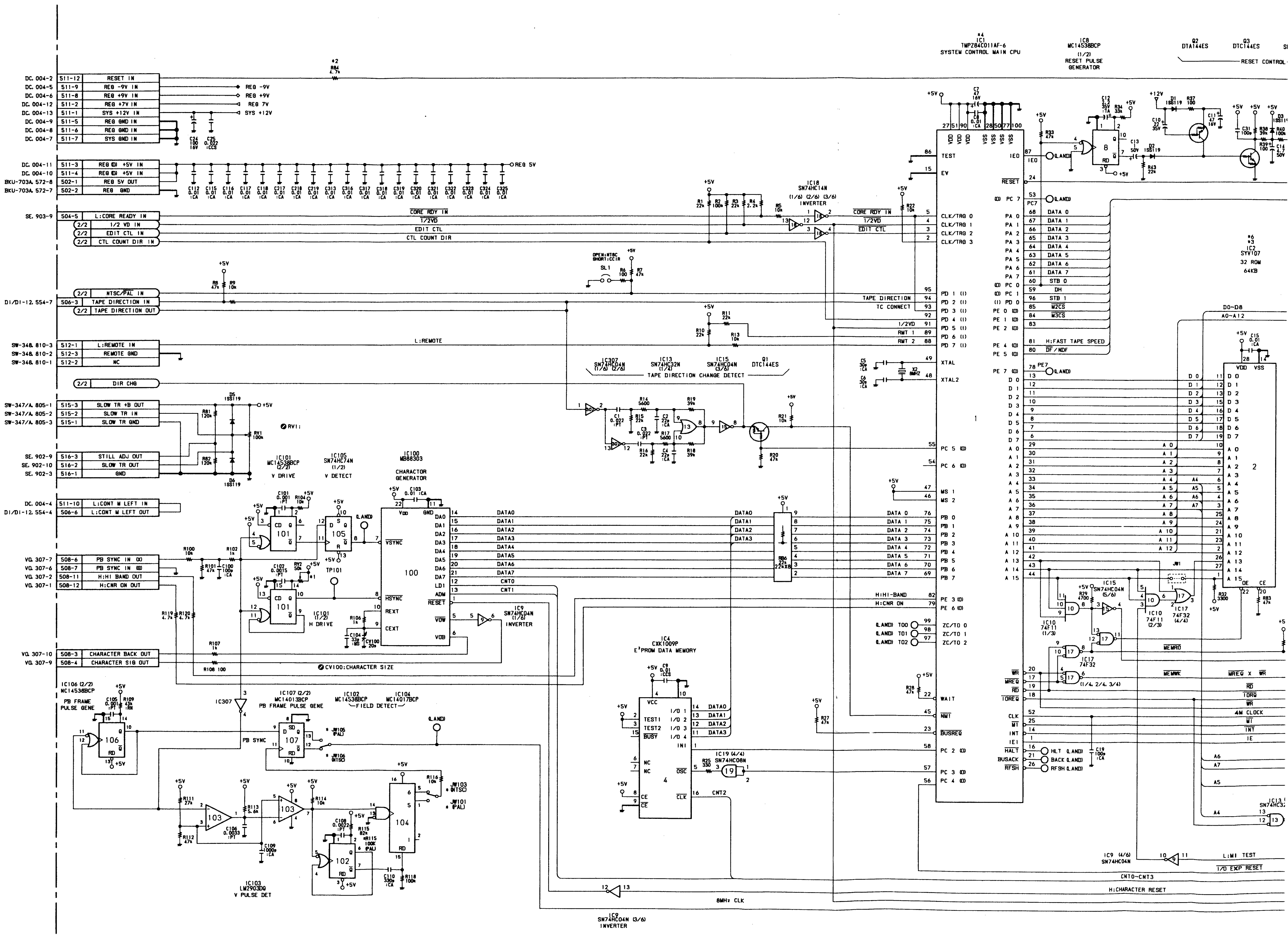
CP-141 —SOLDERING SIDE—
1-631-807-11, 12(1)
EVO-9800

-141
07-11, 12(I)
00

SY-145 (1/2); SYSTEM CONTROL

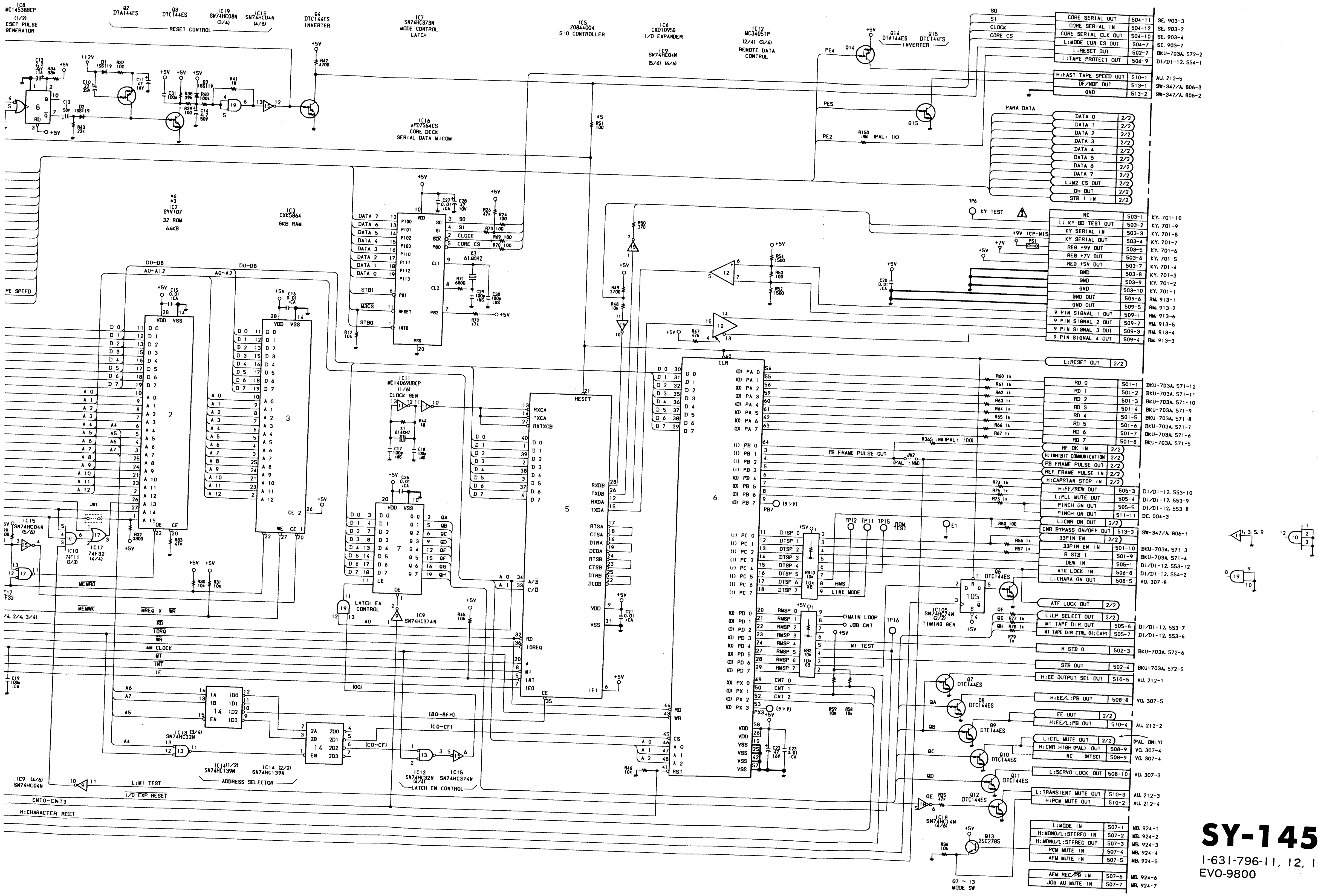
NOTE;

MARK	CHANGE INFORMATION	SERIAL NO
*1	CHANGED R105 36K → RV2 50K	J;10011- UC;10041-
*2	R84 4.7K ADDED	J;10061- UC;10341-
*3	IC2 CHANGED MBM27C512-25 → EV09800-SYV105	
*4	IC1 CHANGED TMPZ84C011AF → TMPZ84C011AF-6	J;10211- UC;10741-
*5	R51 CHANGED 10K → 100	J;10481- UC;11871-
*6	IC2 CHANGED EV09800-SYV105 → EV09800-SYV107	J;10531- UC;12021-


DC. 004-2 S11-12 RESET IN
DC. 004-5 S11-9 REG -9V IN
DC. 004-6 S11-8 REG +9V IN
DC. 004-12 S11-2 REG +7V IN
DC. 004-13 S11-1 SYS +12V IN
DC. 004-9 S11-5 REG GND IN
DC. 004-8 S11-6 REG GND IN
DC. 004-7 S11-7 SYS GND IN
REG -9V
REG +9V
REG 7V
SYS +12V
DC. 004-11 S11-3 REG (D) +5V IN
DC. 004-10 S11-4 REG (D) +5V IN
BKU-703A. 572-8 S02-1 REG 5V OUT
BKU-703A. 572-7 S02-2 REG GND
REG 5V
SE. 903-9 S04-5 L:CORE READY IN
(2/2) 1/2 VD IN
(2/2) EDIT CTL IN
(2/2) CTL COUNT DIR IN
(2/2) NTSC/PAL IN
DI/DI-12. 554-7 S06-3 TAPE DIRECTION IN
(2/2) TAPE DIRECTION OUT
SW-348. 810-3 S12-1 L:REMOTE IN
SW-348. 810-2 S12-3 REMOTE GND
SW-348. 810-1 S12-2 NC
(2/2) DIR CHG
SW-347/A. 805-1 S15-3 SLOW TR +B OUT
SW-347/A. 805-2 S15-2 SLOW TR IN
SW-347/A. 805-3 S15-1 SLOW TR GND
SE. 902-9 S16-3 STILL ADJ OUT
SE. 902-10 S16-2 SLOW TR OUT
SE. 902-3 S16-1 GND
DC. 004-4 S11-10 L:CONT M LEFT IN
DI/DI-12. 554-4 S06-6 L:CONT M LEFT OUT
VG. 307-7 S08-6 PB SYNC IN (N)
VG. 307-6 S08-7 PB SYNC IN (S)
VG. 307-2 S08-11 H:HI BAND OUT
VG. 307-1 S08-12 H:CNR ON OUT
VG. 307-10 S08-3 CHARACTER BACK OUT
VG. 307-9 S08-4 CHARACTER SIG OUT
IC101 MC14538BCP (2/2) V DRIVE
IC105 SN74HC74N (1/2) V DETECT
IC100 MB88303 CHARACTOR GENERATOR
IC101 (1/2) H DRIVE
CV100:CHARACTER SIZE
IC9 SN74HC04N (1/6) INVERTER
IC106 (2/2) MC14538BCP PB FRAME PULSE GENE
IC107 (2/2) MC14013BCP PB FRAME PULSE GENE
IC102 MC14538BCP
IC104 MC14017BCP
FIELD DETECT
PB SYNC
IC103 LM2903DQ V PULSE DET
IC307 SN74HC04N (1/6) (2/6)
IC13 SN74HC32N (1/4)
IC15 SN74HC04N (3/6)
Q1 DTC144ES
TAPE DIRECTION CHANGE DETECT
IC18 SN74HC14N (1/6) (2/6) (3/6) INVERTER
OPEN:NTSC SHORT:CCIR SL1
CORE RDY IN
1/2VD
EDIT CTL
CTL COUNT DIR
L:REMOTE
TAPE DIRECTION
TC CONNECT
RMT 1
RMT 2
IC4 CXK1009P E²PROM DATA MEMORY
IC19 (4/4) SN74HC08N
CNT2
8MHz CLK
IC9 SN74HC04N (3/6) INVERTER
*4 IC1 TMPZ84C011AF-6 SYSTEM CONTROL MAIN CPU
IC8 MC14538BCP (1/2) RESET PULSE GENERATOR
Q2 DTA144ES
Q3 DTC144ES
RESET CONTROL
*6 *3 IC2 SYV107 32 ROM 64KB
TEST
EV
IEO
RESET
CLK/TRG 0
CLK/TRG 1
CLK/TRG 2
CLK/TRG 3
XTAL
XTAL2
MS 1
MS 2
WAIT
NMI
BUSREQ
DATA 0
DATA 1
DATA 2
DATA 3
DATA 4
DATA 5
DATA 6
DATA 7
STB 0
DH
STB 1
M2CS
M3CS
H:FAST TAPE SPEED
DF / WDF
H:HI-BAND
H:CNR ON
ZC/TO 0
ZC/TO 1
ZC/TO 2
WR
MREQ
RD
IOREQ
CLK
M1
INT
IEI
HALT
BUSACK
RFSH
HLT (LAND)
BACK (LAND)
RFSH (LAND)
D0-D8
A0-A12
IC15 SN74HC04N (5/6)
IC10 74F11 (1/3)
IC10 74F11 (2/3)
IC17 74F32 (4/4)
IC17 74F32 (1/4, 2/4, 3/4)
MEMRD
MEMWR
MREQ X WR
IORQ
4M CLOCK
IC9 (4/6) SN74HC04N
L:MI TEST
I/O EXP RESET
CNT0-CNT3
H:CHARACTER RESET
IC13 SN74HC32

注意1：⚠印のついた部品は安全性を維持するため
に重要な部品です。従って交換する時は必ず
指定の部品を使って下さい。

NOTE:
The ⚠-marked components are critical to sefety.
Replace only with same components as specified.


IC8 MC14538BCP (1/2) RESET PULSE GENERATOR
Q2 DTA144ES
Q3 DTC144ES
IC19 SN74HC08N (3/4)
IC15 SN74HC04N (4/6)
RESET CONTROL
Q4 DTC144ES INVERTER
IC7 SN74HC373N MODE CONTROL LATCH
IC5 Z0844004 SIO CONTROLLER
IC6 CXD1095Q I/O EXPANDER
IC9 SN74HC04N (5/6) (6/6)
IC12 MC3405IP (2/4) (3/4) REMOTE DATA CONTROL
Q14 DTA144ES
Q15 DTC144ES
INVERTER
IC16 μPD7564CS CORE DECK SERIAL DATA MICOM
IC2 SYV107 32 ROM 64KB
IC3 CXK5864 8KB RAM
X3 614KHZ
IC11 MC14069UBCP (1/6) CLOCK GEN
X1 614KHZ
IC9 SN74HC374N
LATCH EN CONTROL
IC10 74F11 (2/3)
IC17 74F32 (4/4)
IC15 SN74HC04N (5/6)
IC13 SN74HC32N (3/4)
IC14(1/2) SN74HC139N
IC14 (2/2) SN74HC139N
ADDRESS SELECTOR
IC13 SN74HC32N (4/4)
IC15 SN74HC374N
LATCH EN CONTROL
IC9 (4/6) SN74HC04N
L:MI TEST
I/O EXP RESET
CNT0~CNT3
H:CHARACTER RESET
IC10S SN74HC74N (2/2) TIMING GEN
Q6 DTC144ES
Q7 DTC144ES
Q8 DTC144ES
Q9 DTC144ES
Q10 DTC144ES
Q11 DTC144ES
Q12 DTC144ES
IC18 SN74HC14N (4/6)
Q13 2SC2785
Q7 ~ 13 MODE SW
PARA DATA
KY TEST
CORE SERIAL OUT S04-11 SE. 903-3
CORE SERIAL IN S04-12 SE. 903-2
CORE SERIAL CLK OUT S04-10 SE. 903-4
L:MODE CON CS OUT S04-7 SE. 903-7
L:RESET OUT S02-7 BKU-703A. 572-2
L:TAPE PROTECT OUT S06-9 DI/DI-12. 554-1
H:FAST TAPE SPEED OUT S10-1 AU. 212-5
DF/NDF OUT S13-1 SW-347/A. 806-3
GND S13-2 SW-347/A. 806-2
RD 0 ~ RD 7 S01-1 ~ S01-8 BKU-703A. 571-12 ~ 571-5
L:MODE IN S07-1 MB. 924-1
JOG AU MUTE IN S07-7 MB. 924-7

SY-145(1/2)

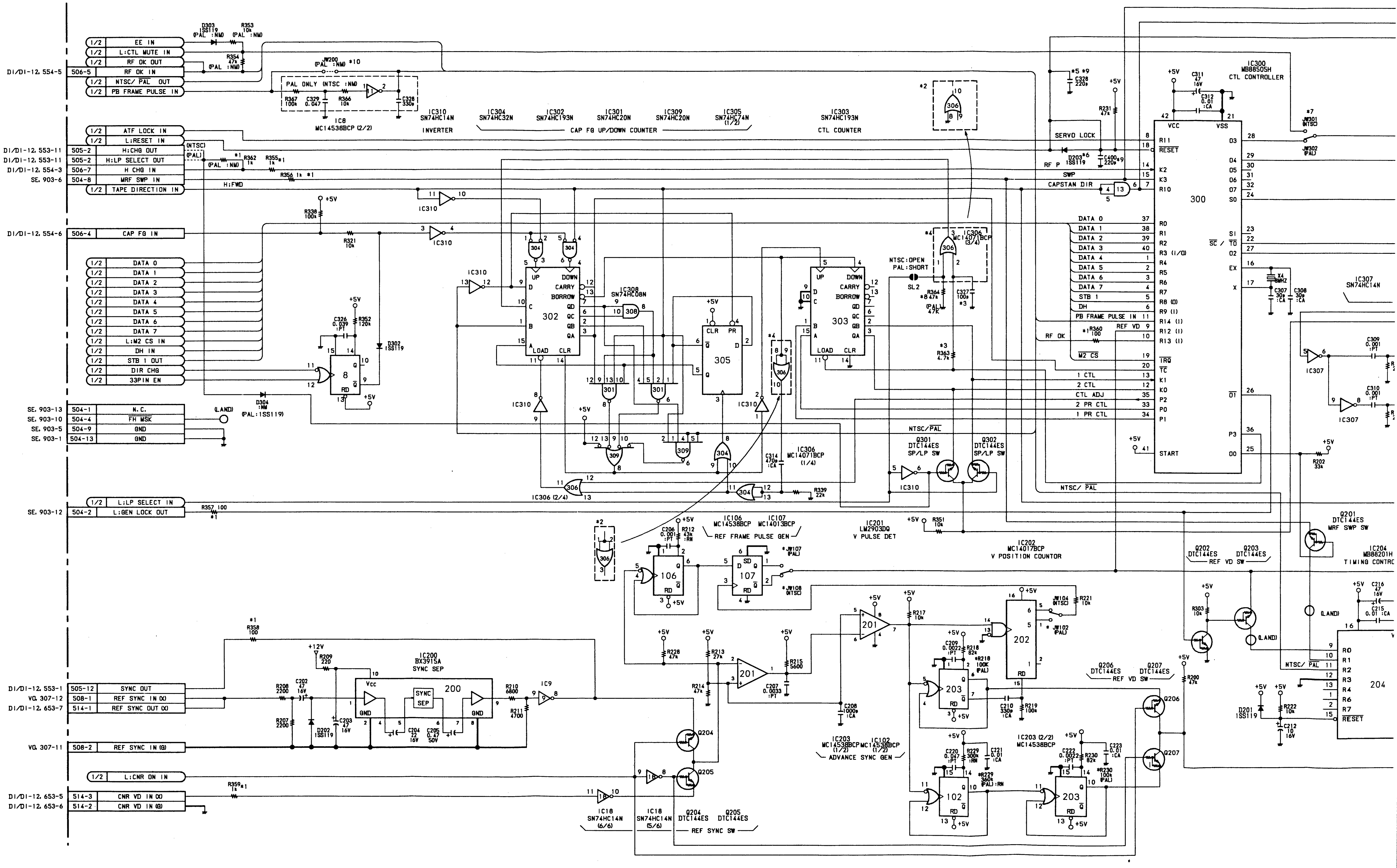
1-631-796-11, 12, 13, 14, 15(2)
EVO-9800

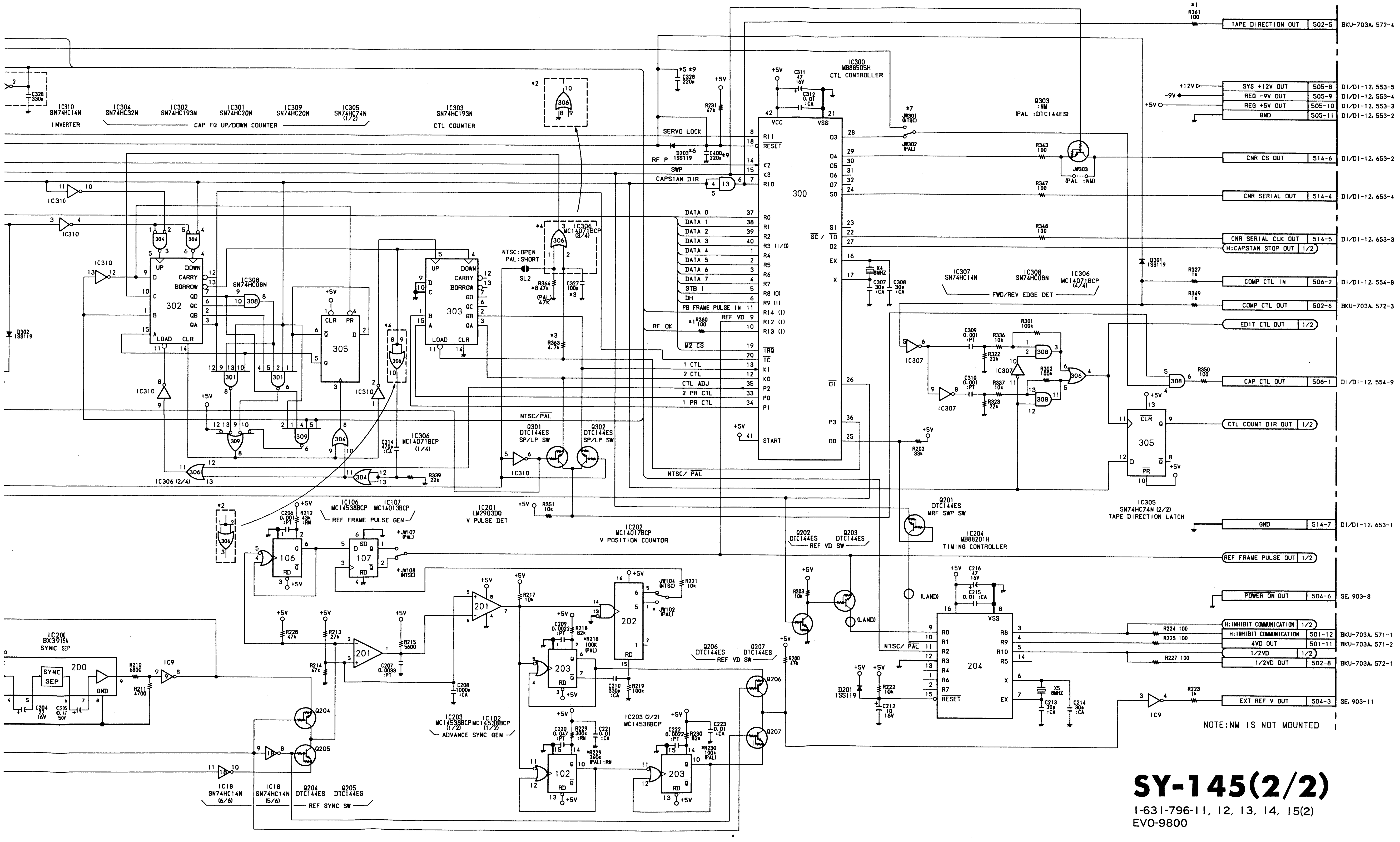
I J K L M N O P

5 (2/2); CTL CONTROL

NOTE;

MARK	CHANGE INFORMATION	SERIAL NO
*1	ADDED R355 1K R356 1K R357 100 R358 100 R359 1K R360 100 R361 100 R362 1K	J;10061- UC;10341-
*2	REFER TO SCHEMATIC DIAGRAM (IC306)	J;10211- UC;10741-
*3	ADDED C327 100P R363 4.7K	
*4	REFER TO SCHEMATIC DIAGRAM (IC306)	J;10331- UC;10871-
*5	C328 220P ADDED	J;10381- UC;11071-
*6	D203 SHORT	J;10381- UC;11271-
*7	JW301 ADDED	J;10381- UC;11671-
*8	R364 47K ADDED	J;10381- UC;11871-
*9	C328 220P DELETED C400 220P ADDED	J;10531- UC;12021-
*10	JW200 ADDED	


EE IN
L:CTL MUTE IN
RF OK OUT
RF OK IN
NTSC/PAL OUT
PB FRAME PULSE IN
ATF LOCK IN
L:RESET IN
H:CHG OUT
H:LP SELECT OUT
H CHG IN
MRF SWP IN
TAPE DIRECTION IN
CAP FG IN
DATA 0
DATA 1
DATA 2
DATA 3
DATA 4
DATA 5
DATA 6
DATA 7
L:M2 CS IN
DH IN
STB 1 OUT
DIR CHG
33PIN EN
N.C.
FH MSK
GND
GND
L:LP SELECT IN
L:GEN LOCK OUT
SYNC OUT
REF SYNC IN (N)
REF SYNC OUT (N)
REF SYNC IN (B)
L:CNR ON IN
CNR VD IN (N)
CNR VD IN (B)
DI/DI-12, 554-5
DI/DI-12, 553-11
DI/DI-12, 553-11
DI/DI-12, 554-3
SE, 903-6
DI/DI-12, 554-6
SE, 903-13
SE, 903-10
SE, 903-5
SE, 903-1
SE, 903-12
DI/DI-12, 553-1
VD, 307-12
DI/DI-12, 653-7
VD, 307-11
DI/DI-12, 653-5
DI/DI-12, 653-6
PAL ONLY (NTSC :NM)
IC8 MC14538BCP (2/2)
IC310 SN74HC14N INVERTER
IC304 SN74HC32N
IC302 SN74HC193N
IC301 SN74HC20N
IC309 SN74HC20N
IC305 SN74HC74N (1/2)
CAP FG UP/DOWN COUNTER
IC303 SN74HC193N CTL COUNTER
IC308 SN74HC08N
IC306 MC14071BCP (1/4)
IC306 (2/4)
IC306 MC14071BCP (3/4)
NTSC:OPEN PAL:SHORT
Q301 DTC144ES SP/LP SW
Q302 DTC144ES SP/LP SW
IC300 MB88505H CTL CONTROLLER
SERVO LOCK
RF P
SWP
CAPSTAN DIR
PB FRAME PULSE IN
REF VD
RF OK
M2 CS
1 CTL
2 CTL
CTL ADJ
2 PR CTL
1 PR CTL
NTSC/PAL
START
IC307 SN74HC14N
IC106 MC14538BCP
IC107 MC14013BCP
REF FRAME PULSE GEN
IC201 LM2903DQ V PULSE DET
IC202 MC14017BCP V POSITION COUNTOR
Q201 DTC144ES MRF SWP SW
Q202 DTC144ES
Q203 DTC144ES
REF VD SW
IC204 MB88201H TIMING CONTROL
IC200 BX3915A SYNC SEP
IC9
Q204
Q205
IC18 SN74HC14N (6/6)
IC18 SN74HC14N (5/6)
Q204 DTC144ES
Q205 DTC144ES
REF SYNC SW
IC203 MC14538BCP (1/2)
IC102 MC14538BCP (1/2)
ADVANCE SYNC GEN
IC203 (2/2) MC14538BCP
Q206 DTC144ES
Q207 DTC144ES
REF VD SW


IC310 SN74HC14N INVERTER
IC304 SN74HC32N
IC302 SN74HC193N
IC301 SN74HC20N
IC309 SN74HC20N
IC305 SN74HC74N (1/2)
CAP FG UP/DOWN COUNTER
IC303 SN74HC193N
CTL COUNTER
IC300 MB88505H
CTL CONTROLLER
300
SERVO LOCK
RF P
SWP
CAPSTAN DIR
DATA 0
DATA 1
DATA 2
DATA 3
DATA 4
DATA 5
DATA 6
DATA 7
STB 1
DH
PB FRAME PULSE IN
REF VD
RF OK
M2 CS
1 CTL
2 CTL
CTL ADJ
2 PR CTL
1 PR CTL
START
NTSC/PAL
NTSC:OPEN
PAL:SHORT
IC306 MC14071BCP (3/4)
IC306 MC14071BCP (1/4)
IC306 (2/4)
IC308 SN74HC08N
Q301 DTC144ES SP/LP SW
Q302 DTC144ES SP/LP SW
Q303 :NM (PAL :DTC144ES)
IC307 SN74HC14N
IC308 SN74HC08N
IC306 MC14071BCP (4/4)
FWD/REV EDGE DET
IC305 SN74HC74N (2/2)
TAPE DIRECTION LATCH
Q201 DTC144ES MRF SWP SW
IC204 MB88201H
TIMING CONTROLLER
204
Q202 DTC144ES
Q203 DTC144ES
REF VD SW
IC106 MC14538BCP
IC107 MC14013BCP
REF FRAME PULSE GEN
IC201 LM2903DQ
V PULSE DET
IC202 MC14017BCP
V POSITION COUNTOR
IC200 BX3915A
SYNC SEP
200
IC9
Q204
Q205
IC18 SN74HC14N (6/6)
IC18 SN74HC14N (5/6)
Q204 DTC144ES
Q205 DTC144ES
REF SYNC SW
IC203 MC14538BCP (1/2)
IC102 MC14538BCP (1/2)
ADVANCE SYNC GEN
IC203 (2/2) MC14538BCP
Q206 DTC144ES
Q207 DTC144ES
REF VD SW
(LAND)
X4 8MHz
X5 8MHz
TAPE DIRECTION OUT 502-5 BKU-703A, 572-4
+12V
-9V
+5V
SYS +12V OUT 505-8 DI/DI-12, 553-5
REG -9V OUT 505-9 DI/DI-12, 553-4
REG +5V OUT 505-10 DI/DI-12, 553-3
GND 505-11 DI/DI-12, 553-2
CNR CS OUT 514-6 DI/DI-12, 653-2
CNR SERIAL OUT 514-4 DI/DI-12, 653-4
CNR SERIAL CLK OUT 514-5 DI/DI-12, 653-3
H:CAPSTAN STOP OUT 1/2
COMP CTL IN 506-2 DI/DI-12, 554-8
COMP CTL OUT 502-6 BKU-703A, 572-3
EDIT CTL OUT 1/2
CAP CTL OUT 506-1 DI/DI-12, 554-9
CTL COUNT DIR OUT 1/2
GND 514-7 DI/DI-12, 653-1
REF FRAME PULSE OUT 1/2
POWER ON OUT 504-6 SE, 903-8
H:INHIBIT COMMUNICATION 1/2
H:INHIBIT COMMUNICATION 501-12 BKU-703A, 571-1
4VD OUT 501-11 BKU-703A, 571-2
1/2VD 1/2
1/2VD OUT 502-8 BKU-703A, 572-1
EXT REF V OUT 504-3 SE, 903-11
NOTE:NM IS NOT MOUNTED

SY-145(2/2)

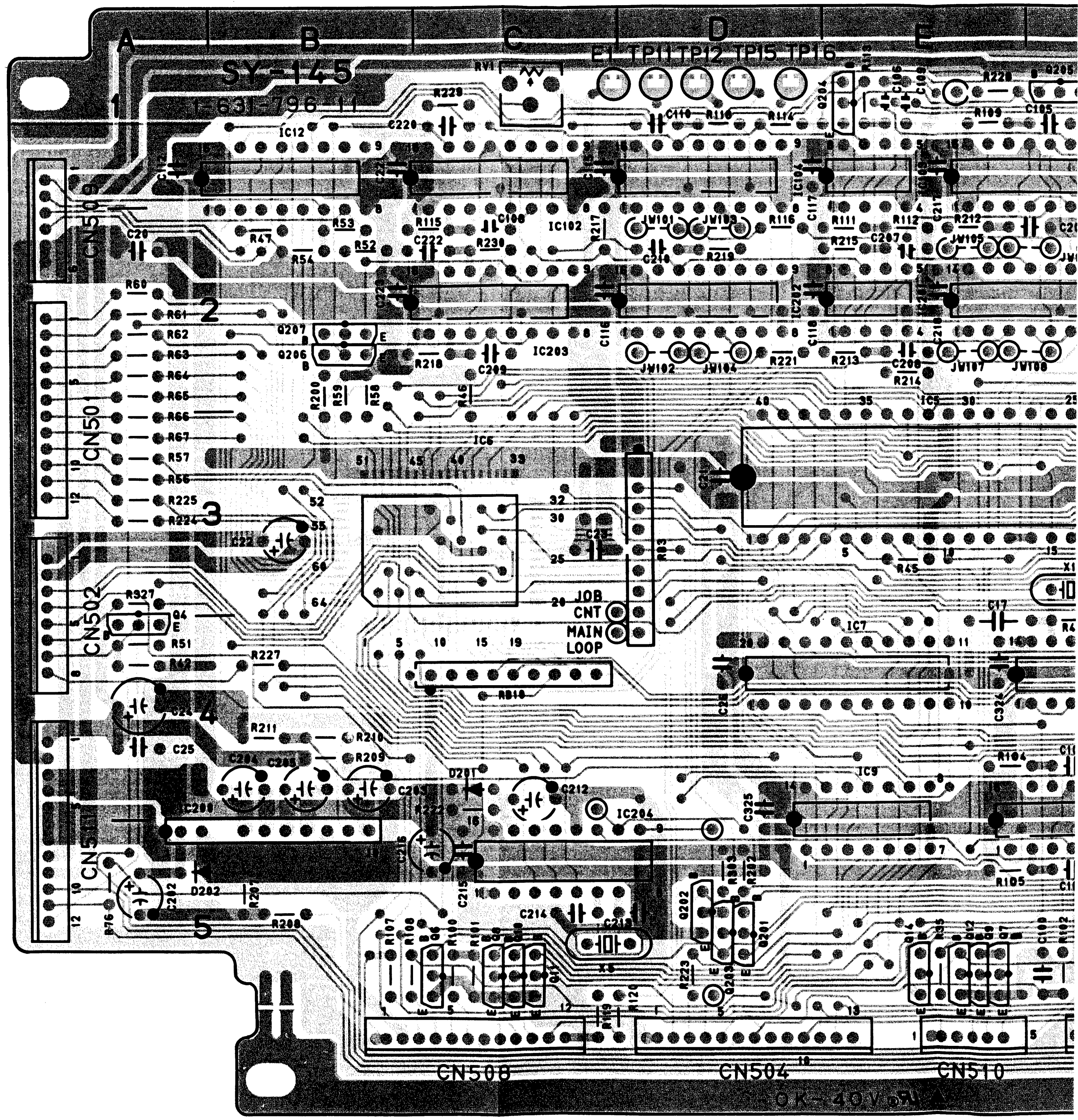
1-631-796-11, 12, 13, 14, 15(2)
EVO-9800

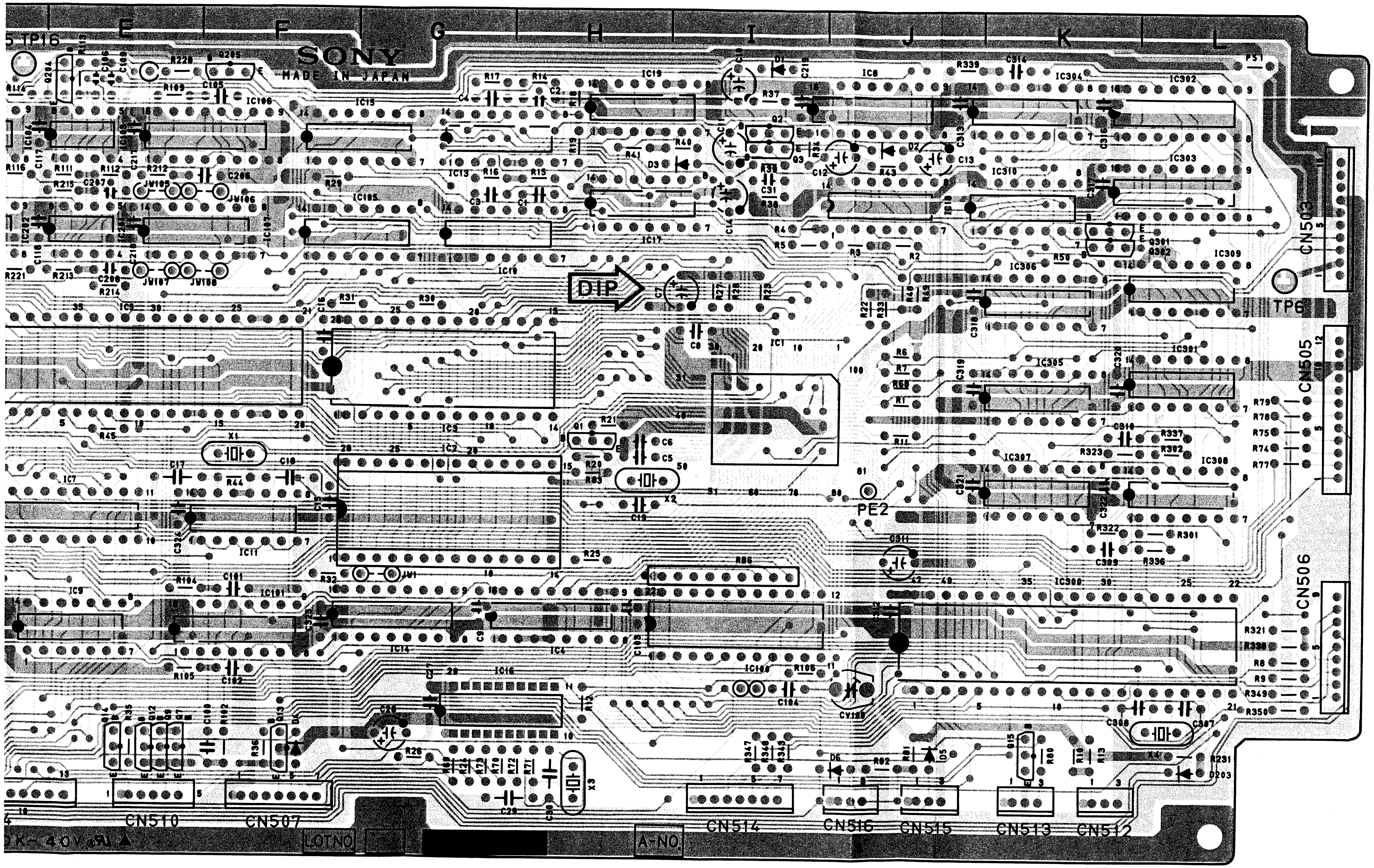
SY-145; SYSTEM CONTROL

S/N UP TO 10330 (J)
S/N UP TO 10870 (UC)

SY-145(1-631-796-11,12)

CNI2	G-3	IC107	F-2	X3	H-5
CN501	A-3	IC200	A-4	X4	L-5
CN502	A-4	IC201	E-2	X5	C-5
CN503	L-2	IC202	D-2		
CN504	D-5	IC203	C-2		
CN505	L-3	IC204	D-4		
CN506	L-4	IC300	K-4		
CN507	F-5	IC301	L-3		
CN508	C-5	IC302	L-1		
CN509	A-2	IC303	L-1		
CN510	E-5	IC304	K-1		
CN511	A-5	IC305	K-3		
CN512	K-5	IC306	K-2		
CN513	K-5	IC307	K-3		
CN514	I-5	IC308	L-3		
CN515	J-5	IC309	L-2		
CN516	J-5	IC310	K-2		
CV100	J-5	PS1	L-1		
D1	I-1	Q1	H-3		
D2	J-1	Q2	I-1		
D3	H-2	Q3	I-2		
D4	F-5	Q4	A-3		
D5	J-5	Q6	C-5		
D6	J-5	Q7	E-5		
D201	C-4	Q8	C-5		
D202	A-5	Q9	E-5		
D203	L-5	Q10	C-5		
		Q11	C-5		
E1	C-1	Q12	E-5		
		Q13	F-5		
IC1	I-3	Q14	E-5		
IC2	G-3	Q15	K-5		
IC3	G-3	Q201	D-5		
IC4	H-5	Q202	D-5		
IC5	E-2	Q203	D-5		
IC6	C-3	Q204	D-1		
IC7	E-4	Q205	F-1		
IC8	J-1	Q206	B-2		
IC9	E-4	Q207	B-2		
IC10	G-2	Q301	L-2		
IC11	F-4	Q302	L-2		
IC12	B-1				
IC13	G-2	RB3	D-3		
IC14	G-5	RB6	I-4		
IC15	G-1	RB10	C-4		
IC16	G-5				
IC17	H-2	RV1	C-1		
IC18	J-2				
IC19	H-1	TP6	L-2		
IC100	I-5	TP11	D-1		
IC101	F-4	TP12	D-1		
IC102	C-2	TP15	D-1		
IC103	E-1	TP16	D-1		
IC104	D-1				
IC105	G-2	X1	F-3		
IC106	F-1	X2	H-4		


A
B
C
D
E
SY-145
1-631-796-11
E1 TP11 TP12 TP15 TP16
1
2
3
4
5
CN509
CN501
CN502
CN511
CN508
CN504
CN510
IC5
IC7
IC9
IC12
IC102
IC203
IC204
JOB
CNT
MAIN
LOOP


E
F
G
H
I
J
K
L
TP16
SONY
MADE IN JAPAN
DIP
PE2
TP6
CN503
CN505
CN506
IC1
IC2
IC4
IC5
IC16
IC300
X1
X2
X3
CN510
CN507
CN514
CN516
CN515
CN513
CN512
LOT NO
A-NO.

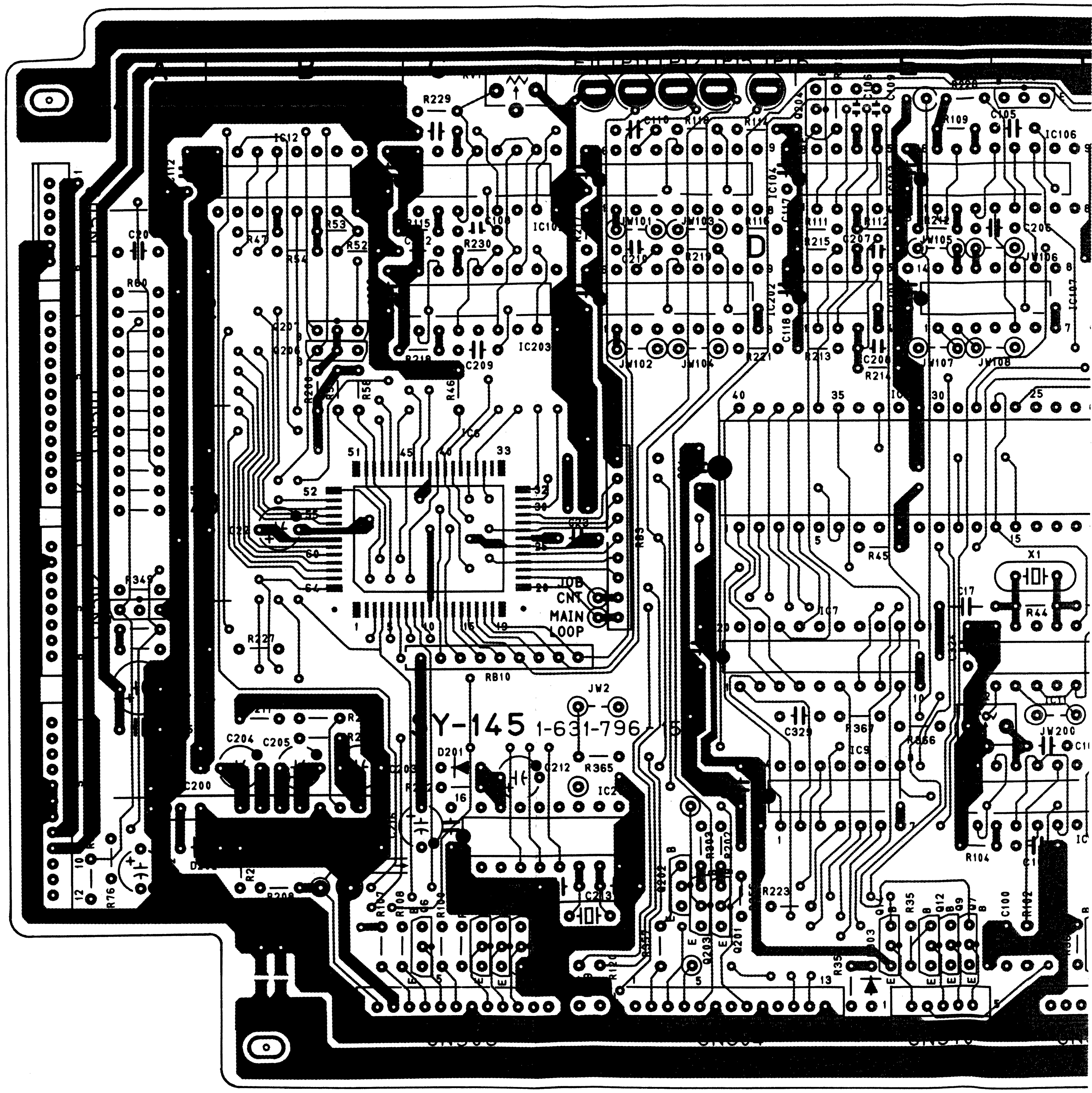
SY-145 —COMPONENT SIDE—
1-631-796-11, 12(1)
EVO-9800

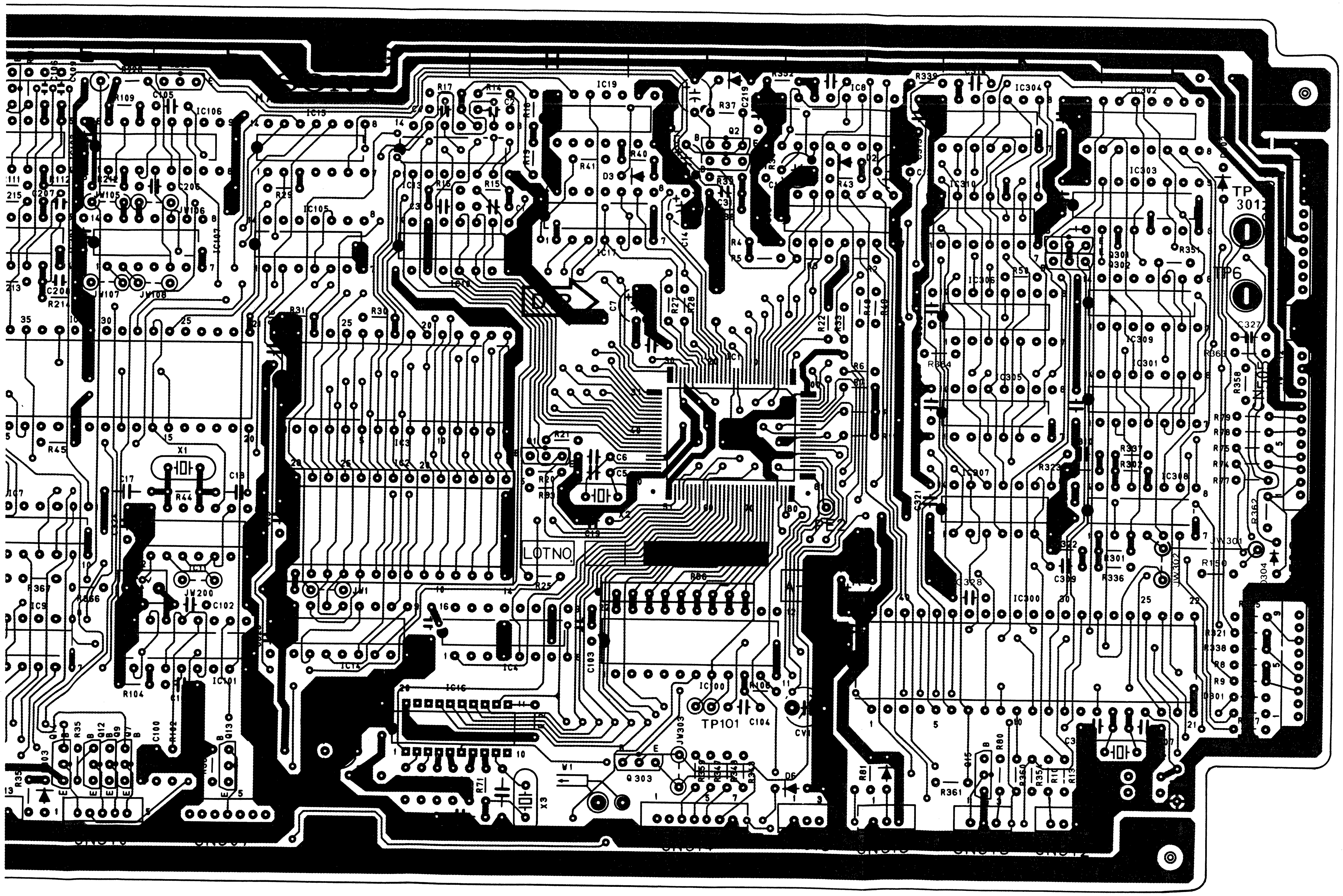
SY-145; SYSTEM CONTROL

S/N 10331 AND HIGHER (J)
S/N 10871 AND HIGHER (UC)

SY-145(1-631-796-13,14,15)

CNI2	G-3	IC105	G-2	TP101	I-5
CN501	A-3	IC106	F-1		
CN502	A-4	IC107	F-2	X1	F-3
CN503	L-2	IC200	A-4	X2	H-4
CN504	D-5	IC201	E-2	X3	H-5
CN505	L-3	IC202	D-2	X4	L-5
CN506	L-4	IC203	C-2	X5	C-5
CN507	F-5	IC204	D-4		
CN508	C-5	IC300	K-4		
CN509	A-2	IC301	L-3		
CN510	E-5	IC302	L-1		
CN511	A-4	IC303	L-1		
CN512	K-5	IC304	K-1		
CN513	K-5	IC305	K-3		
CN514	I-5	IC306	K-2		
CN515	J-5	IC307	K-3		
CN516	J-5	IC308	L-3		
		IC309	L-2		
CV100	J-5	IC310	K-2		
D1	I-1	PS1	L-1		
D2	J-1				
D3	H-1	Q1	H-3		
D5	J-5	Q2	I-1		
D6	J-5	Q3	I-1		
D201	C-4	Q4	A-4		
D202	A-5	Q6	C-5		
D203	L-5	Q7	E-5		
D301	L-5	Q8	C-5		
D302	L-2	Q9	E-5		
D303	E-5	Q10	C-5		
		Q11	C-5		
E1	C-1	Q12	E-5		
		Q13	F-5		
IC1	I-3	Q14	E-5		
IC2	G-3	Q15	K-5		
IC3	G-3	Q201	D-5		
IC4	H-5	Q202	D-5		
IC5	E-2	Q203	D-5		
IC6	C-3	Q204	E-1		
IC7	E-4	Q205	F-1		
IC8	J-1	Q206	B-2		
IC9	E-4	Q207	B-2		
IC10	G-2	Q301	L-2		
IC11	F-4	Q302	L-2		
IC12	B-1				
IC13	G-2	RB3	D-3		
IC14	G-5	RB6	I-4		
IC15	G-1	RB10	C-4		
IC16	G-5				
IC17	H-2	RV1	C-1		
IC18	I-2	RV2	F-4		
IC19	H-1				
IC100	I-5	TP6	L-2		
IC101	F-5	TP11	D-1		
IC102	C-2	TP12	D-1		
IC103	E-1	TP15	D-1		
IC104	D-1	TP16	D-1		


SY-145 1-631-796-15
JOB
CNT
MAIN
LOOP
IC12
IC6
IC7
IC9
IC203
IC104
IC106
X1
JW2
D201
R365
RB10
R229
R109
C105
C204
C205
C200
C329
JW200
R104
R223


IC19
IC8
IC304
IC302
IC15
IC106
IC105
IC13
IC17
IC18
IC303
IC310
IC306
IC309
IC301
IC305
IC3
IC2
IC307
IC308
IC300
IC14
IC4
IC16
IC100
IC101
IC9
IC1
TP101
TP 301
TP6
X1
X2
X3
LOTNO.
JW105
JW106
JW107
JW108
JW200
JW301
JW302
JW303
JW1
Q2
Q303
D3
D6
CV1
R37
R41
R40
R43
R44
R45
R25
R71
R81
R80
R361
R150
R104
C219
C17
C18
C102
C103
C104
C327
C328
C329

SY-145 —COMPONENT SIDE—

1-631-796-13, 14, 15(1)

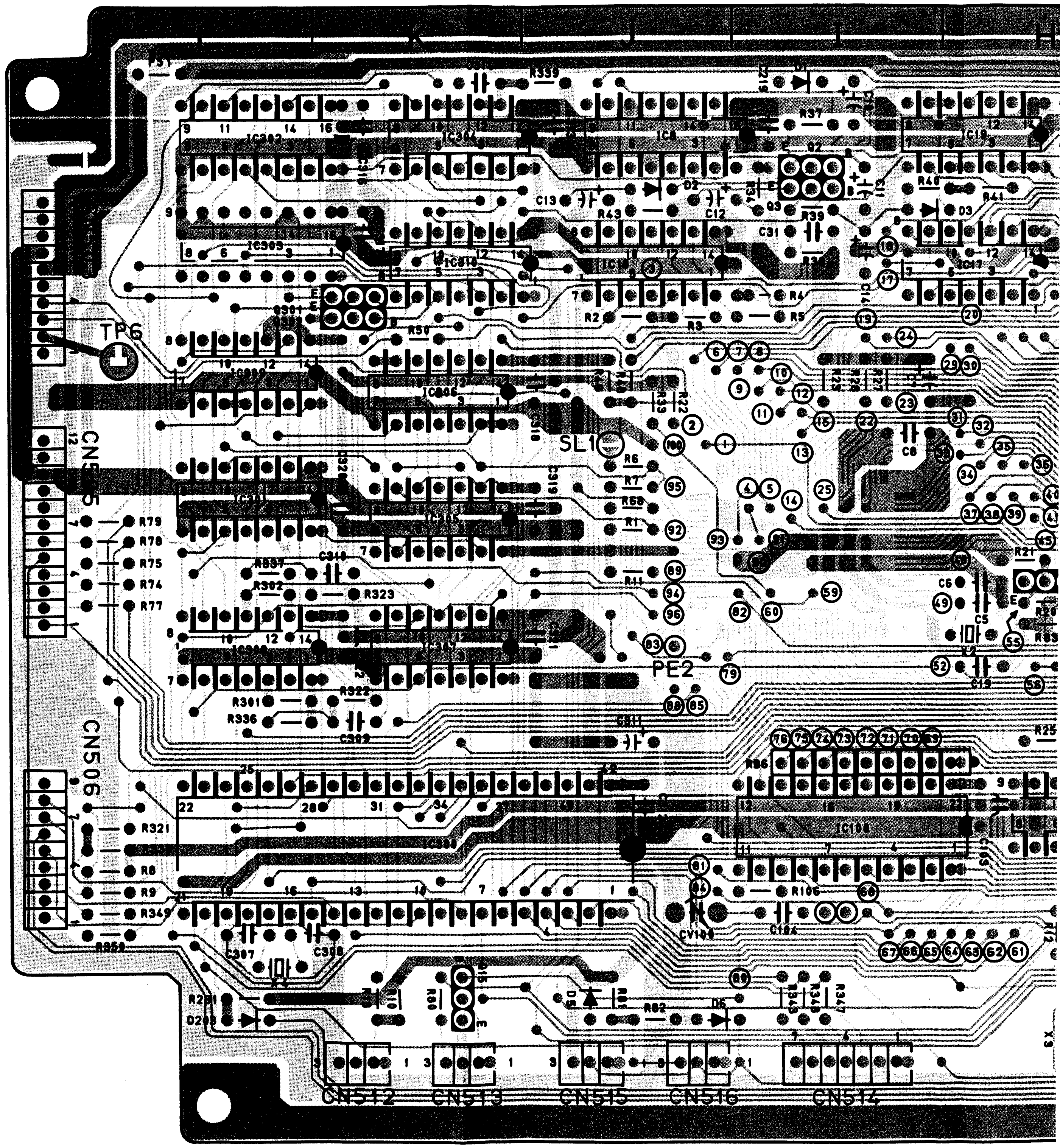
EVO-9800

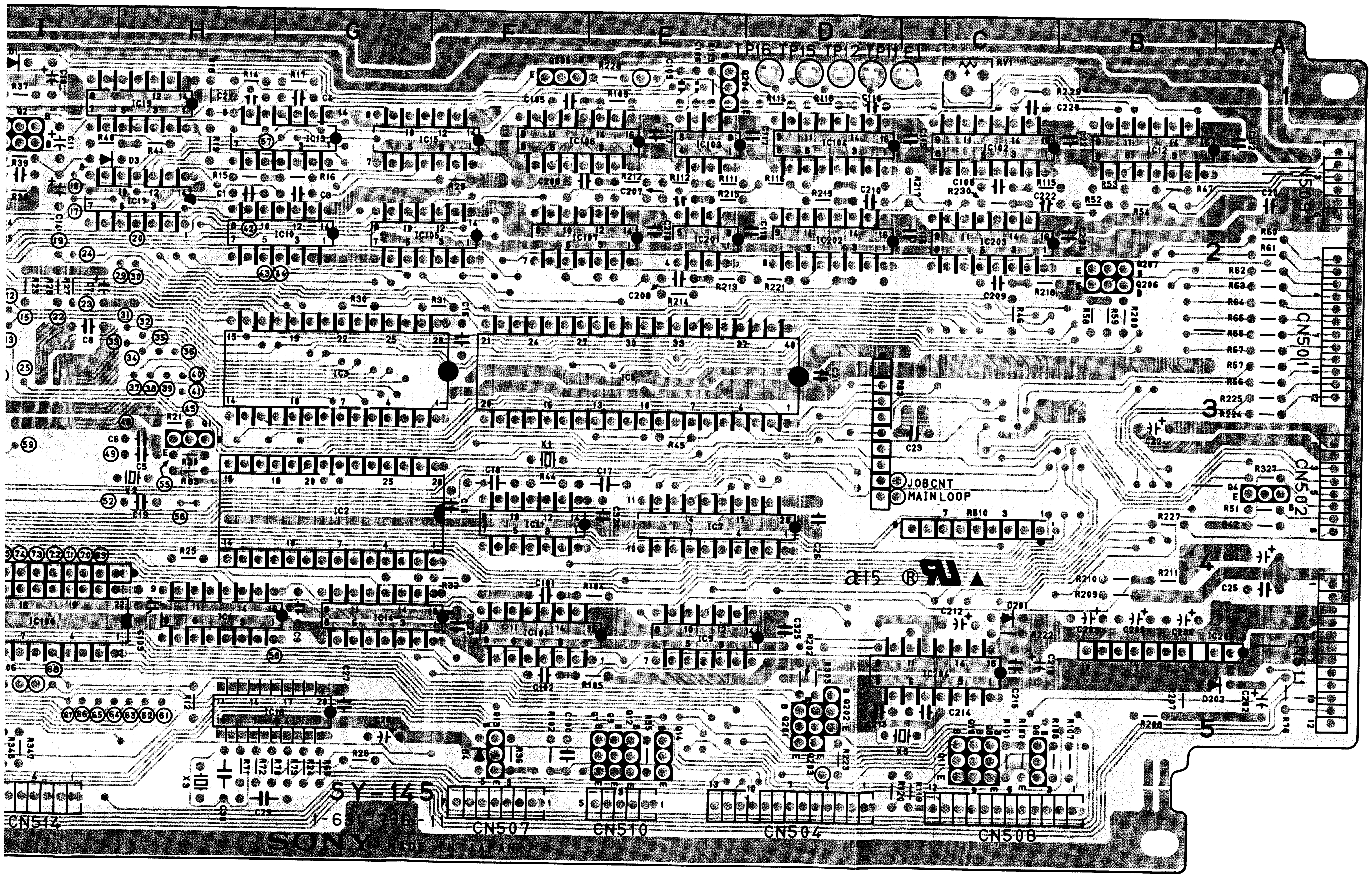
SY-145 ; SYSTEM CONTROL

S/N UP TO 10330 (J)
S/N UP TO 10870 (UC)

SY-145(1-631-796-11,12)

CNI2	G-3
CN501	A-3
CN502	A-4
CN503	L-2
CN504	D-5
CN505	L-3
CN506	L-4
CN507	F-5
CN508	C-5
CN509	A-2
CN510	E-5
CN511	A-5
CN512	K-5
CN513	K-5
CN514	I-5
CN515	J-5
CN516	J-5
CV100	J-5
D1	I-1
D2	J-1
D3	H-2
D4	F-5
D5	J-5
D6	J-5
D201	C-4
D202	A-5
D203	L-5
E1	C-1
IC1	I-3
IC2	G-3
IC3	G-3
IC4	H-5
IC5	E-2
IC6	C-3
IC7	E-4
IC8	J-1
IC9	E-4
IC10	G-2
IC11	F-4
IC12	B-1
IC13	G-2
IC14	G-5
IC15	G-1
IC16	G-5
IC17	H-2
IC18	J-2
IC19	H-1
IC100	I-5
IC101	F-4
IC102	C-2
IC103	E-1
IC104	D-1
IC105	G-2
IC106	F-1
IC107	F-2
IC200	A-4
IC201	E-2
IC202	D-2
IC203	C-2
IC204	D-4
IC300	K-4
IC301	L-3
IC302	L-1
IC303	L-1
IC304	K-1
IC305	K-3
IC306	K-2
IC307	K-3
IC308	L-3
IC309	L-2
IC310	K-2
PS1	L-1
Q1	H-3
Q2	I-1
Q3	I-2
Q4	A-3
Q6	C-5
Q7	E-5
Q8	C-5
Q9	E-5
Q10	C-5
Q11	C-5
Q12	E-5
Q13	F-5
Q14	E-5
Q15	K-5
Q201	D-5
Q202	D-5
Q203	D-5
Q204	D-1
Q205	F-1
Q206	B-2
Q207	B-2
Q301	L-2
Q302	L-2
RB3	D-3
RB6	I-4
RB10	C-4
RV1	C-1
TP6	L-2
TP11	D-1
TP12	D-1
TP15	D-1
TP16	D-1
X1	F-3
X2	H-4
X3	H-5
X4	L-5
X5	C-5




I
H
G
F
E
D
C
B
A
1
2
3
4
5
TP16
TP15
TP12
TP11
E1
RV1
IC19
IC13
IC15
IC106
IC103
IC104
IC102
IC12
IC17
IC10
IC105
IC107
IC201
IC202
IC203
IC3
IC5
IC2
IC11
IC7
IC100
IC4
IC14
IC101
IC9
IC204
IC205
IC18
X1
X2
X3
X5
JOBCNT
MAIN LOOP
CN509
CN501
CN502
CN511
CN514
CN507
CN510
CN504
CN508
SY-145
1-631-796-1
SONY
MADE IN JAPAN
a15

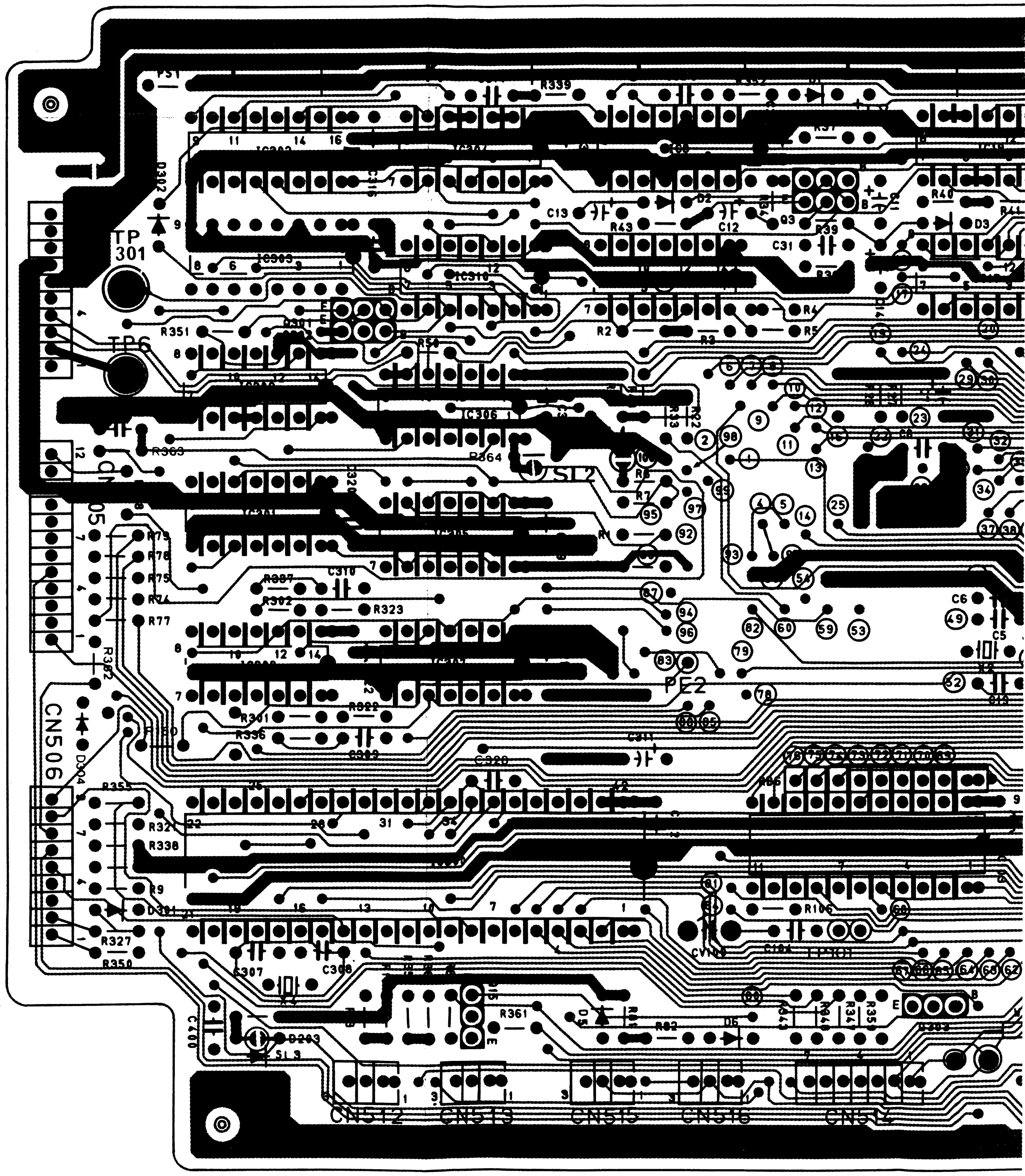
SY-145 —SOLDERING SIDE—
1-631-796-11, 12(1)
EVO-9800

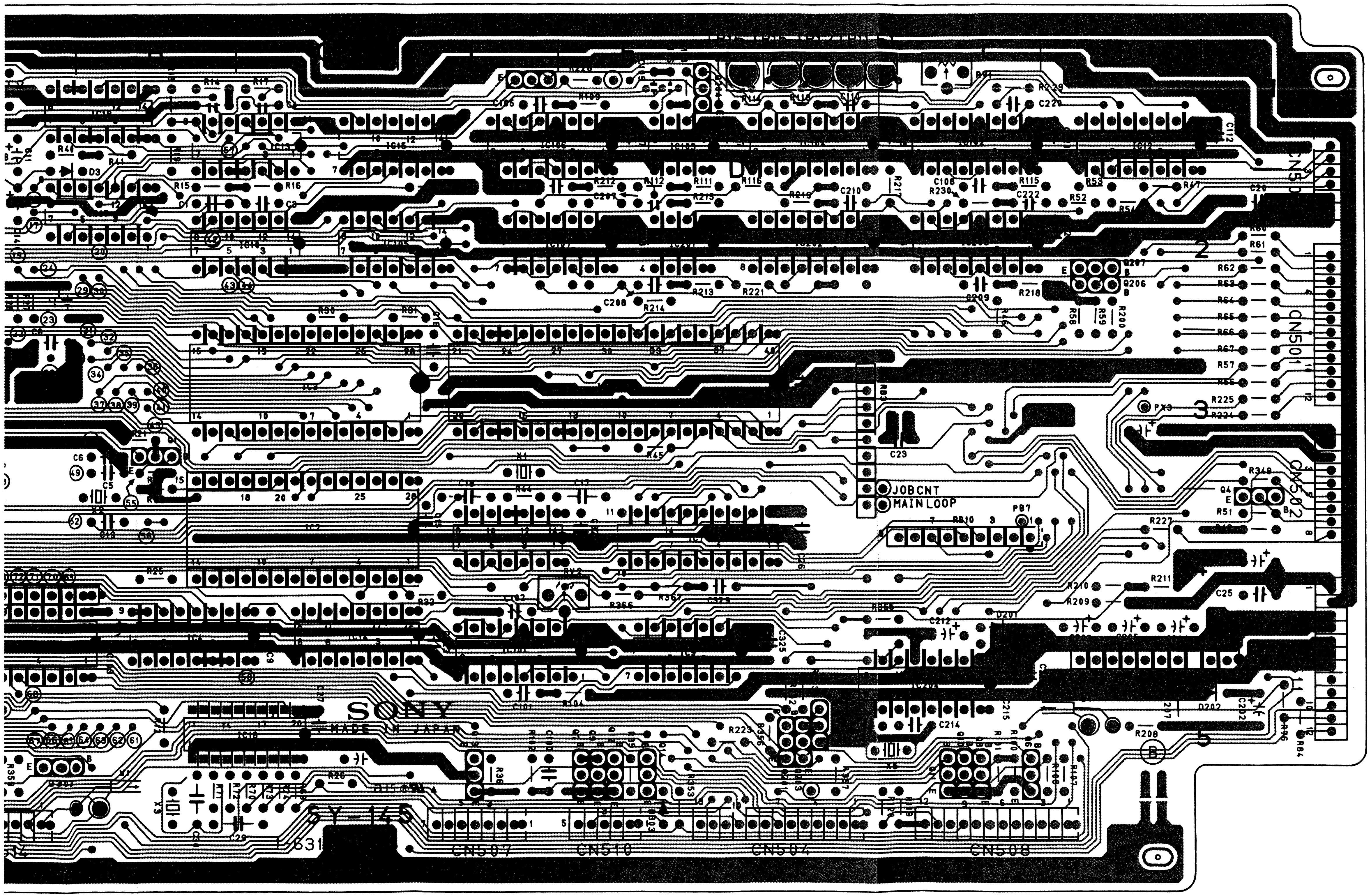
SY-145; SYSTEM CONTROL

S/N 10331 AND HIGHER (J)
S/N 10871AND HIGHER (UC)

SY-145(1-631-796-13,14,15)

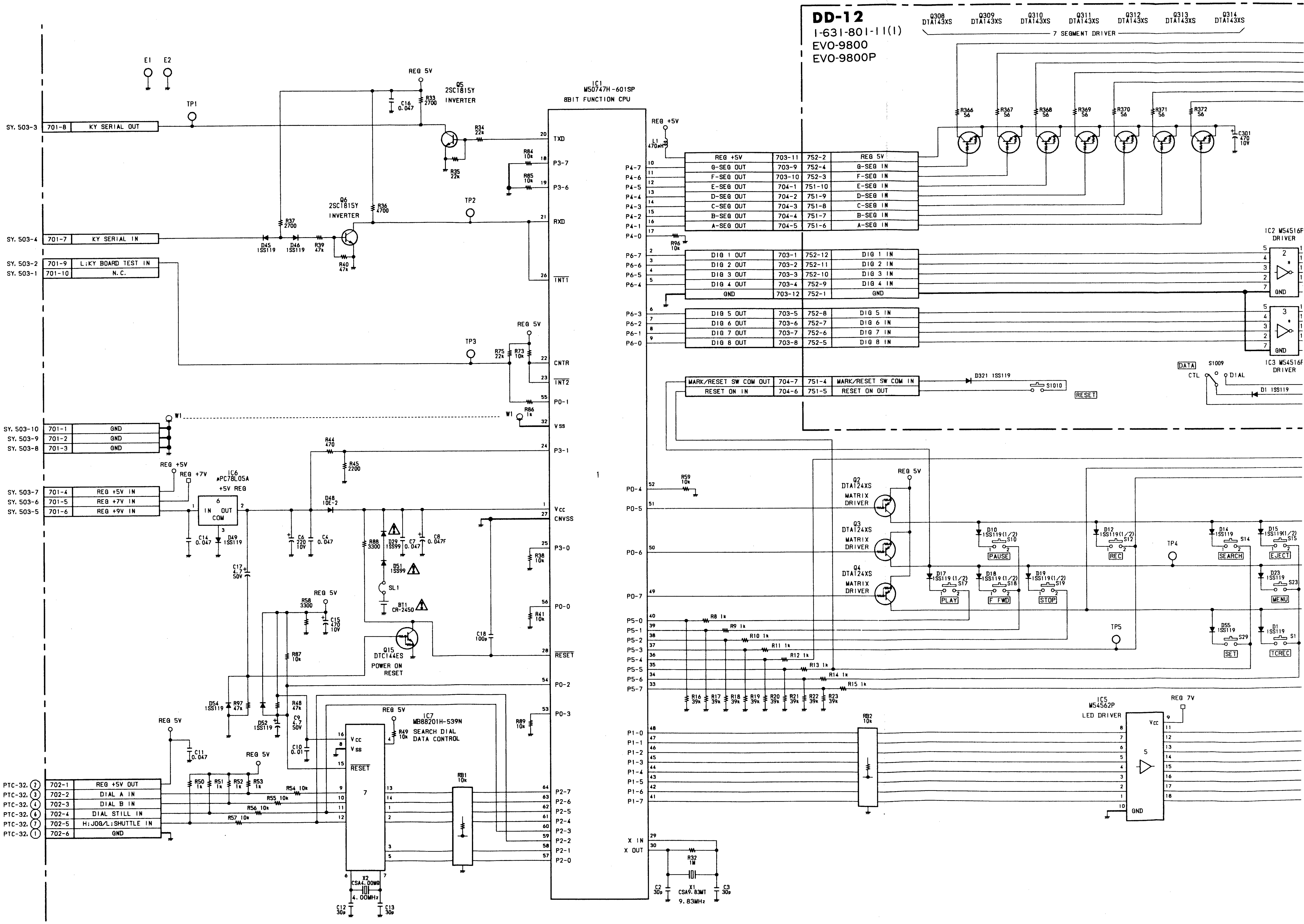
CNI2	G-3	IC105	G-2	TP101	I-5
CN501	A-3	IC106	F-1		
CN502	A-4	IC107	F-2	X1	F-3
CN503	L-2	IC200	A-4	X2	H-4
CN504	D-5	IC201	E-2	X3	H-5
CN505	L-3	IC202	D-2	X4	L-5
CN506	L-4	IC203	C-2	X5	C-5
CN507	F-5	IC204	D-4		
CN508	C-5	IC300	K-4		
CN509	A-2	IC301	L-3		
CN510	E-5	IC302	L-1		
CN511	A-4	IC303	L-1		
CN512	K-5	IC304	K-1		
CN513	K-5	IC305	K-3		
CN514	I-5	IC306	K-2		
CN515	J-5	IC307	K-3		
CN516	J-5	IC308	L-3		
		IC309	L-2		
CV100	J-5	IC310	K-2		
D1	I-1	PS1	L-1		
D2	J-1				
D3	H-1	Q1	H-3		
D5	J-5	Q2	I-1		
D6	J-5	Q3	I-1		
D201	C-4	Q4	A-4		
D202	A-5	Q6	C-5		
D203	L-5	Q7	E-5		
D301	L-5	Q8	C-5		
D302	L-2	Q9	E-5		
D303	E-5	Q10	C-5		
		Q11	C-5		
E1	C-1	Q12	E-5		
		Q13	F-5		
IC1	I-3	Q14	E-5		
IC2	G-3	Q15	K-5		
IC3	G-3	Q201	D-5		
IC4	H-5	Q202	D-5		
IC5	E-2	Q203	D-5		
IC6	C-3	Q204	E-1		
IC7	E-4	Q205	F-1		
IC8	J-1	Q206	B-2		
IC9	E-4	Q207	B-2		
IC10	G-2	Q301	L-2		
IC11	F-4	Q302	L-2		
IC12	B-1				
IC13	G-2	RB3	D-3		
IC14	G-5	RB6	I-4		
IC15	G-1	RB10	C-4		
IC16	G-5				
IC17	H-2	RV1	C-1		
IC18	I-2	RV2	F-4		
IC19	H-1				
IC100	I-5	TP6	L-2		
IC101	F-5	TP11	D-1		
IC102	C-2	TP12	D-1		
IC103	E-1	TP15	D-1		
IC104	D-1	TP16	D-1		




SONY
MADE IN JAPAN
SY-145
JOBCNT
MAIN LOOP
CN501
CN502
CN507
CN510
CN504
CN508
IC3
IC2
X1
X3
C23
C25
PB7
PX3
2
3
5

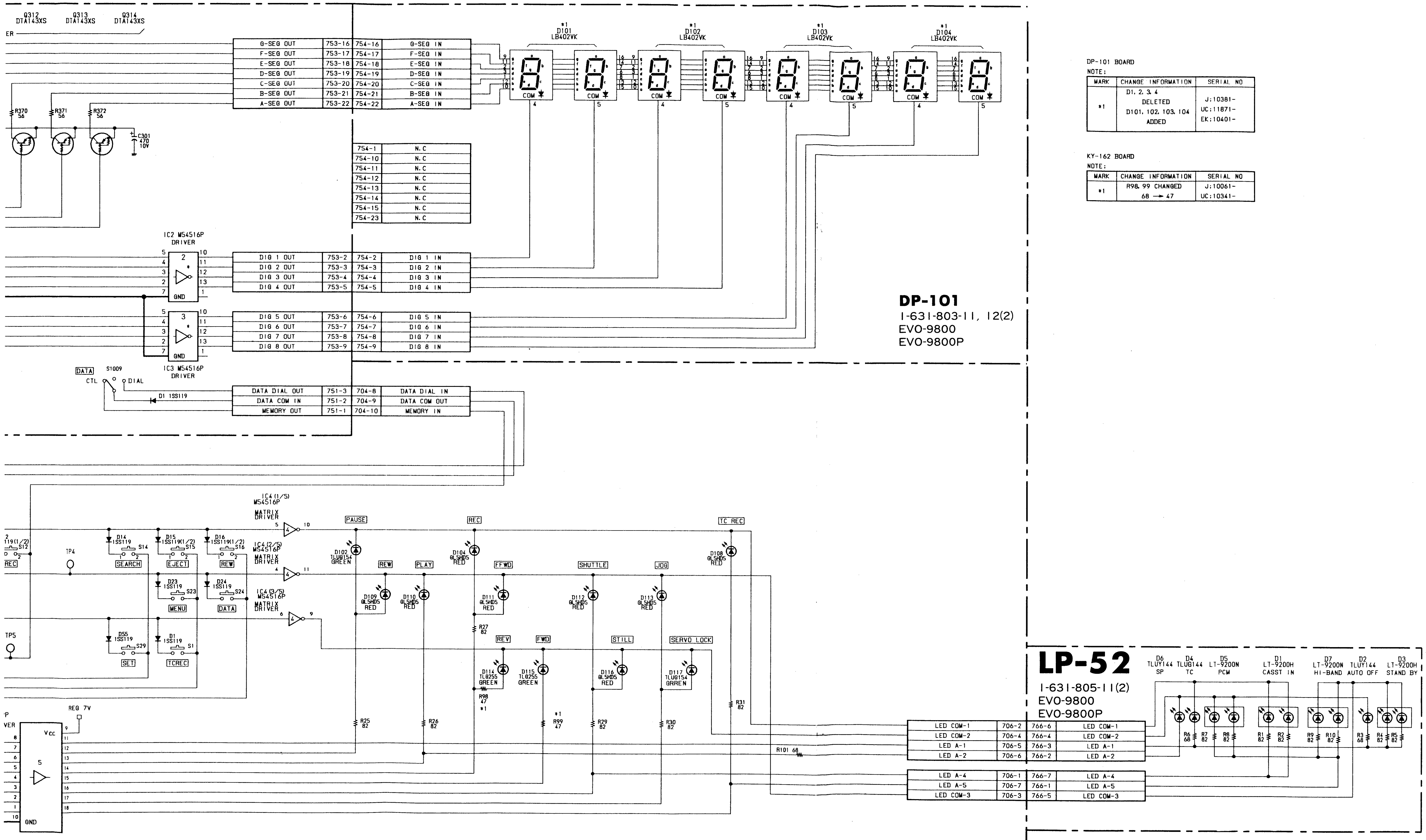
SY-145 – SOLDERING SIDE –
1-631-796-13, 14, 15(1)
EVO-9800

KY-162; FUNCTION KEY BOARD
DD-12; DISPLAY DRIVE
DP-101; DISPLAY
LP-52; MODE DISPLAY


DD-12
1-631-801-11(1)
EVO-9800
EVO-9800P
IC1 M50747H-601SP 8BIT FUNCTION CPU
Q5 2SC1815Y INVERTER
Q6 2SC1815Y INVERTER
IC6 μPC78L05A +5V REG
IC7 MB88201H-539N SEARCH DIAL DATA CONTROL
Q15 DTC144ES POWER ON RESET
Q2 DTA124XS MATRIX DRIVER
Q3 DTA124XS MATRIX DRIVER
Q4 DTA124XS MATRIX DRIVER
IC5 M54562P LED DRIVER
IC2 M54516P DRIVER
IC3 M54516P DRIVER
Q308–Q314 DTA143XS 7 SEGMENT DRIVER
KY SERIAL OUT
KY SERIAL IN
L:KY BOARD TEST IN
N.C.
GND
REG +5V IN
REG +7V IN
REG +9V IN
REG +5V OUT
DIAL A IN
DIAL B IN
DIAL STILL IN
H:JOG/L:SHUTTLE IN
G-SEG OUT
F-SEG OUT
E-SEG OUT
D-SEG OUT
C-SEG OUT
B-SEG OUT
A-SEG OUT
DIG 1 OUT
DIG 2 OUT
DIG 3 OUT
DIG 4 OUT
DIG 5 OUT
DIG 6 OUT
DIG 7 OUT
DIG 8 OUT
MARK/RESET SW COM OUT
RESET ON IN
PAUSE
REC
SEARCH
EJECT
PLAY
F FWD
STOP
MENU
SET
TCREC
RESET
DATA
CTL
DIAL
X1 CSA9.83MT 9.83MHz
X2 CSA4.00MG 4.00MHz
B11 CR-2450
SL1

注意1：⚠印のついた部品は安全性を維持するために重要な部品です。従って交換する時は必ず指定の部品を使って下さい。

NOTE:
The ⚠-marked components are critical to sefety.
Replace only with same components as specified.


Q312 DTA143XS
Q313 DTA143XS
Q314 DTA143XS
R370 56
R371 56
R372 56
C301 470 10V
G-SEG OUT 753-16 754-16 G-SEG IN
F-SEG OUT 753-17 754-17 F-SEG IN
E-SEG OUT 753-18 754-18 E-SEG IN
D-SEG OUT 753-19 754-19 D-SEG IN
C-SEG OUT 753-20 754-20 C-SEG IN
B-SEG OUT 753-21 754-21 B-SEG IN
A-SEG OUT 753-22 754-22 A-SEG IN
754-1 N.C
754-10 N.C
754-11 N.C
754-12 N.C
754-13 N.C
754-14 N.C
754-15 N.C
754-23 N.C
*1 D101 LB402VK
*1 D102 LB402VK
*1 D103 LB402VK
*1 D104 LB402VK
COM
IC2 M54516P DRIVER
IC3 M54516P DRIVER
GND
DIG 1 OUT 753-2 754-2 DIG 1 IN
DIG 2 OUT 753-3 754-3 DIG 2 IN
DIG 3 OUT 753-4 754-4 DIG 3 IN
DIG 4 OUT 753-5 754-5 DIG 4 IN
DIG 5 OUT 753-6 754-6 DIG 5 IN
DIG 6 OUT 753-7 754-7 DIG 6 IN
DIG 7 OUT 753-8 754-8 DIG 7 IN
DIG 8 OUT 753-9 754-9 DIG 8 IN
DP-101
1-631-803-11, 12(2)
EVO-9800
EVO-9800P
DATA
S1009
CTL
DIAL
D1 1SS119
DATA DIAL OUT 751-3 704-8 DATA DIAL IN
DATA COM IN 751-2 704-9 DATA COM OUT
MEMORY OUT 751-1 704-10 MEMORY IN
IC4 (1/5) M54516P MATRIX DRIVER
IC4 (2/5) M54516P MATRIX DRIVER
IC4 (3/5) M54516P MATRIX DRIVER
D14 1SS119 S14 SEARCH
D15 1SS119(1/2) S15 EJECT
D16 1SS119(1/2) S16 REW
S12 REC
TP4
D23 1SS119 S23 MENU
D24 1SS119 S24 DATA
D55 1SS119 S29 SET
D1 1SS119 S1 TCREC
TP5
PAUSE
D102 TLUG154 GREEN
REC
D104 GL5HD5 RED
TC REC
D108 GL5HD5 RED
REW
PLAY
FFWD
SHUTTLE
JOG
D109 GL5HD5 RED
D110 GL5HD5 RED
D111 GL5HD5 RED
D112 GL5HD5 RED
D113 GL5HD5 RED
R27 82
REV
FWD
STILL
SERVO LOCK
D114 TL0255 GREEN
D115 TL0255 GREEN
D116 GL5HD5 RED
D117 TLUG154 GRREN
R98 47 *1
R99 47 *1
R25 82
R26 82
R29 82
R30 82
R31 82
R101 68
REG 7V
Vcc
5
GND
LP-52
1-631-805-11(2)
EVO-9800
EVO-9800P
D6 TLUY144 SP
D4 TLUG144 TC
D5 LT-9200N PCM
D1 LT-9200H CASST IN
D7 LT-9200N HI-BAND
D2 TLUY144 AUTO OFF
D3 LT-9200H STAND BY
R6 68
R7 82
R8 82
R1 82
R2 82
R9 82
R10 82
R3 68
R4 82
R5 82
LED COM-1 706-2 766-6 LED COM-1
LED COM-2 706-4 766-4 LED COM-2
LED A-1 706-5 766-3 LED A-1
LED A-2 706-6 766-2 LED A-2
LED A-4 706-1 766-7 LED A-4
LED A-5 706-7 766-1 LED A-5
LED COM-3 706-3 766-5 LED COM-3

DP-101 BOARD
NOTE;

MARK	CHANGE INFORMATION	SERIAL NO
*1	D1, 2, 3, 4 DELETED D101, 102, 103, 104 ADDED	J;10381- UC;11871- EK;10401-

KY-162 BOARD
NOTE;

MARK	CHANGE INFORMATION	SERIAL NO
*1	R98, 99 CHANGED 68 → 47	J;10061- UC;10341-

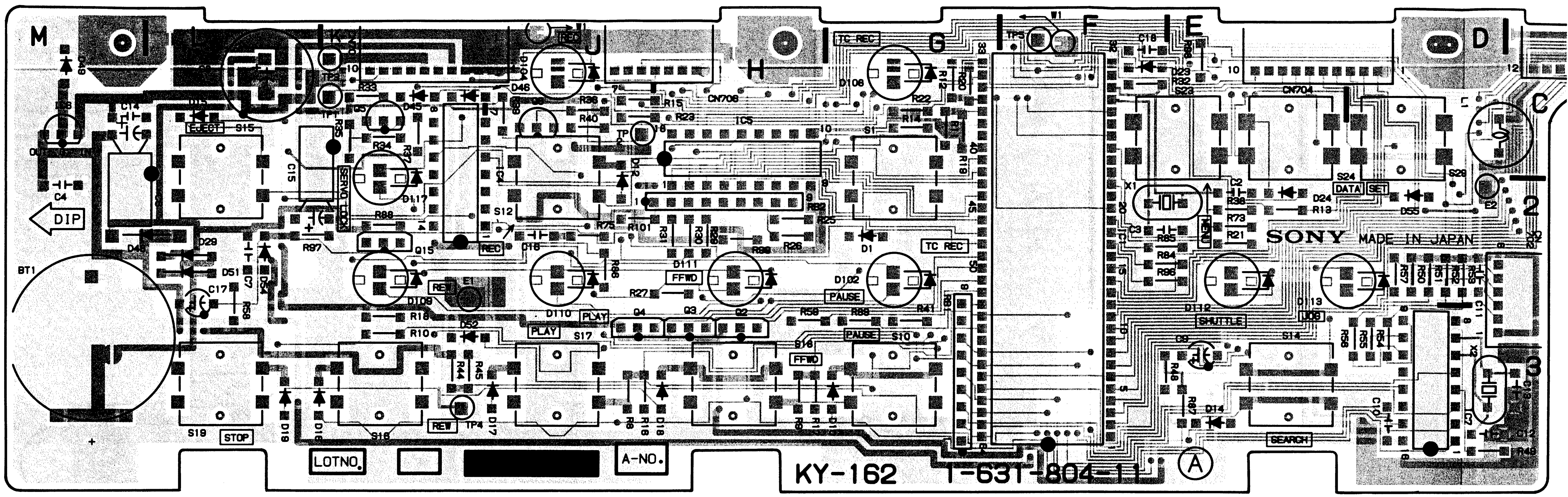
KY-162
1-631-804-11, 12(2)
EVO-9800
EVO-9800P

REF NO	TYPE	GND	+5V	PACKAGE
IC1	M50747-601SP	32	1	別紙
IC2	M54516P	7		14PIN DIP
IC3	M54516P	7		14PIN DIP
IC4	M54516P	7		14PIN DIP
IC5	M54562P	10		18PIN DIP
IC6	μPC78M05H	3		別紙
IC7	MB88201H-539N	8	16	16PIN DIP

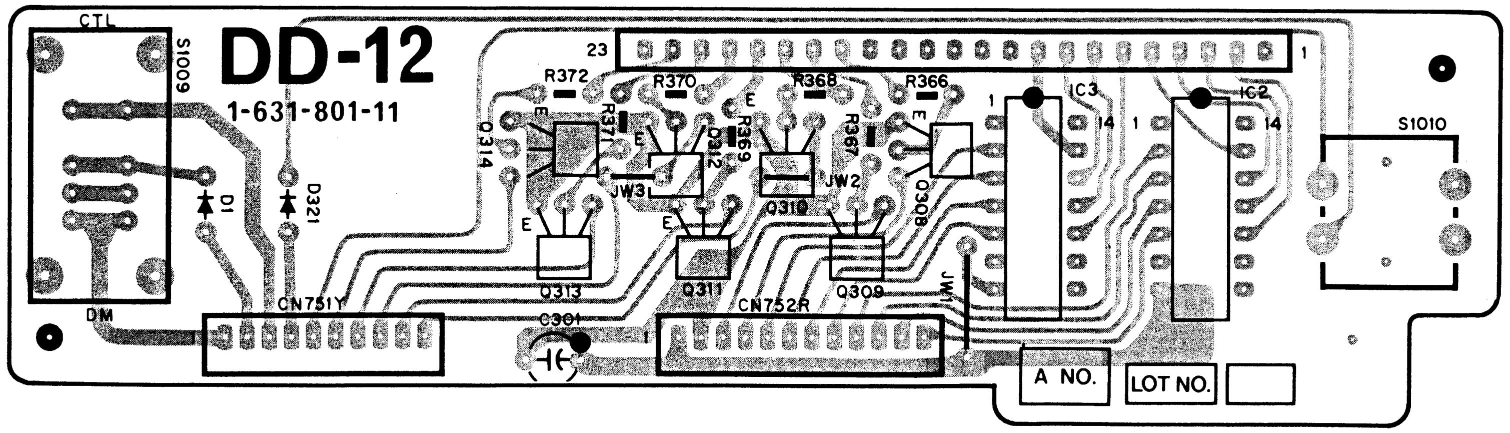
KY-162; FUNCTION KEY BOARD
DD-12; DISPLAY DRIVE
DP-101; DISPLAY
LP-52; MODE DISPLAY

KY-162(1-631-804-11,12) C

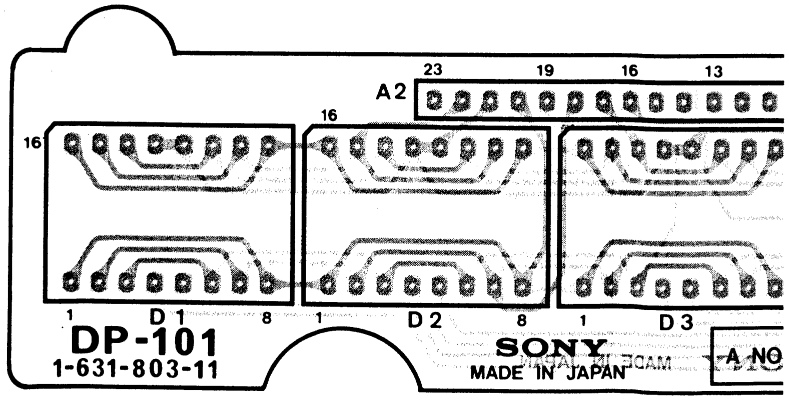
BT1	M-2	RB2	H-2
CN701	K-1	S1	G-1
CN702	C-2	S10	G-3
CN703	C-1	S12	J-2
CN704	E-1	S14	E-3
CN706	H-1	S15	L-1
		S16	K-3
D1	G-2	S17	J-3
D10	G-3	S18	H-3
D12	J-1	S19	L-3
D14	E-3	S23	E-1
D15	L-1	S24	D-1
D16	L-3	S29	D-1
D17	J-3		
D18	H-3	TP1	K-1
D19	L-3	TP2	J-1
D23	E-1	TP3	K-1
D24	E-2	TP4	K-3
D29	L-2	TP5	F-1
D45	K-1		
D46	J-1	X1	F-2
D48	M-2	X2	D-3
D49	M-1		
D51	L-2		
D52	K-3		
D54	L-2		
D55	D-2		
D102	G-2		
D104	J-1		
D108	G-1		
D109	K-2		
D110	J-3		
D111	H-2		
D112	E-3		
D113	E-2		
D114	B-1		
D115	A-1		
D116	B-1		
D117	K-2		
E1	K-2		
E2	D-2		
IC1	F-2		
IC4	J-1		
IC5	H-1		
IC6	M-1		
IC7	D-3		
Q2	H-3		
Q3	H-3		
Q4	J-3		
Q5	K-1		
Q6	J-1		
Q15	K-2		
RB1	G-2		

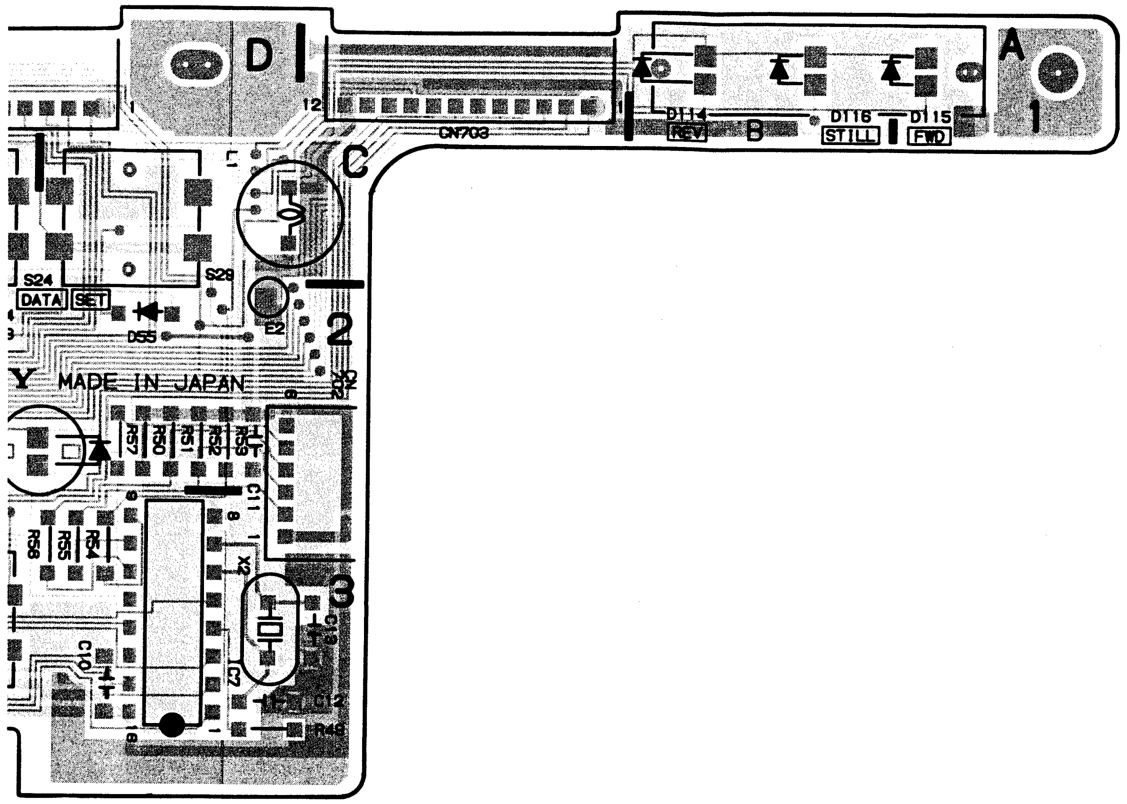

M
L
K
J
H
G
F
E
D
C
1
2
3
BT1
DIP
EJECT
SERVO LOCK
REC
REW
PLAY
FFWD
PAUSE
STOP
TC REC
DATA
SET
SHUTTLE
JOG
SEARCH
CN704
CN706
IC5
SONY MADE IN JAPAN
LOTNO.
A-NO.
KY-162 1-631-804-11
A

KY-162 —COMPONENT SIDE—
1-631-804-11, 12(1)
EVO-9800
EVO-9800P

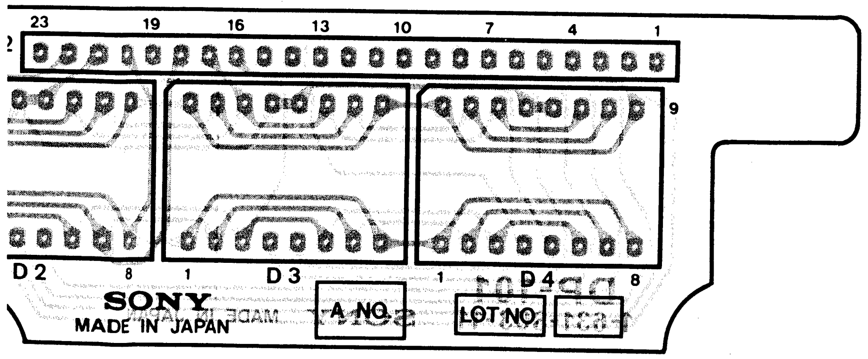

DD-12
1-631-801-11
CTL
S1009
S1010
D1
D321
Q314
R372
R370
R368
R366
R371
R369
R367
Q312
Q310
Q308
JW3
JW2
JW1
Q313
Q311
Q309
IC3
IC2
CN751Y
CN752R
C301
DM
23
1
14
A NO.
LOT NO.

DD-12 —COMPONENT SIDE—
1-631-801-11(1)
EVO-9800
EVO-9800P

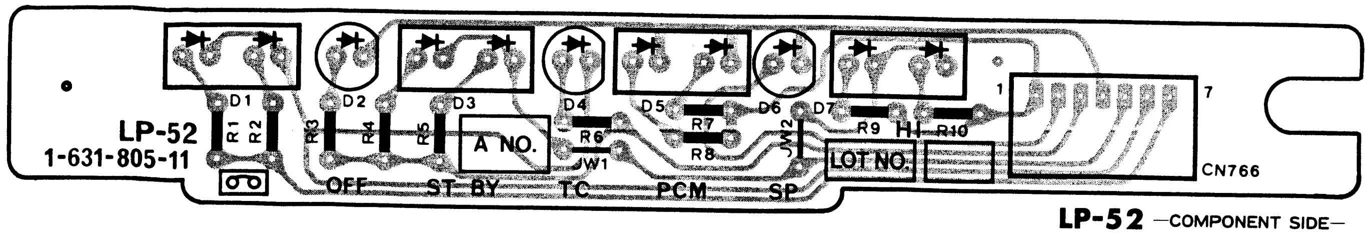

A2
23
19
16
13
D 1
D 2
D 3
1
8
DP-101
1-631-803-11
SONY
MADE IN JAPAN
A NO


D
A
1
B
C
2
3
12
CN703
D114
REV
D116
STILL
D115
FWD
S24
DATA
SET
S28
D55
E2
MADE IN JAPAN
R57
R50
R51
R52
R53
C11
R56
R55
R54
X2
C10
C7
C12
R49
C13

KY-162 —COMPONENT SIDE—
1-631-804-11, 12(1)
EVO-9800
EVO-9800P


23
19
16
13
10
7
4
1
9
D 2
8
1
D 3
1
D 4
8
SONY
MADE IN JAPAN
A NO.
LOT NO.

DP-101 —COMPONENT SIDE—
1-631-803-11, 12(1)
EVO-9800
EVO-9800P


LP-52
1-631-805-11
D1
D2
D3
D4
D5
D6
D7
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
JW1
JW2
A NO.
LOT NO.
HI
OFF
ST BY
TC
PCM
SP
1
7
CN766

LP-52 —COMPONENT SIDE—
1-631-805-11(1)
EVO-9800
EVO-9800P

1

2

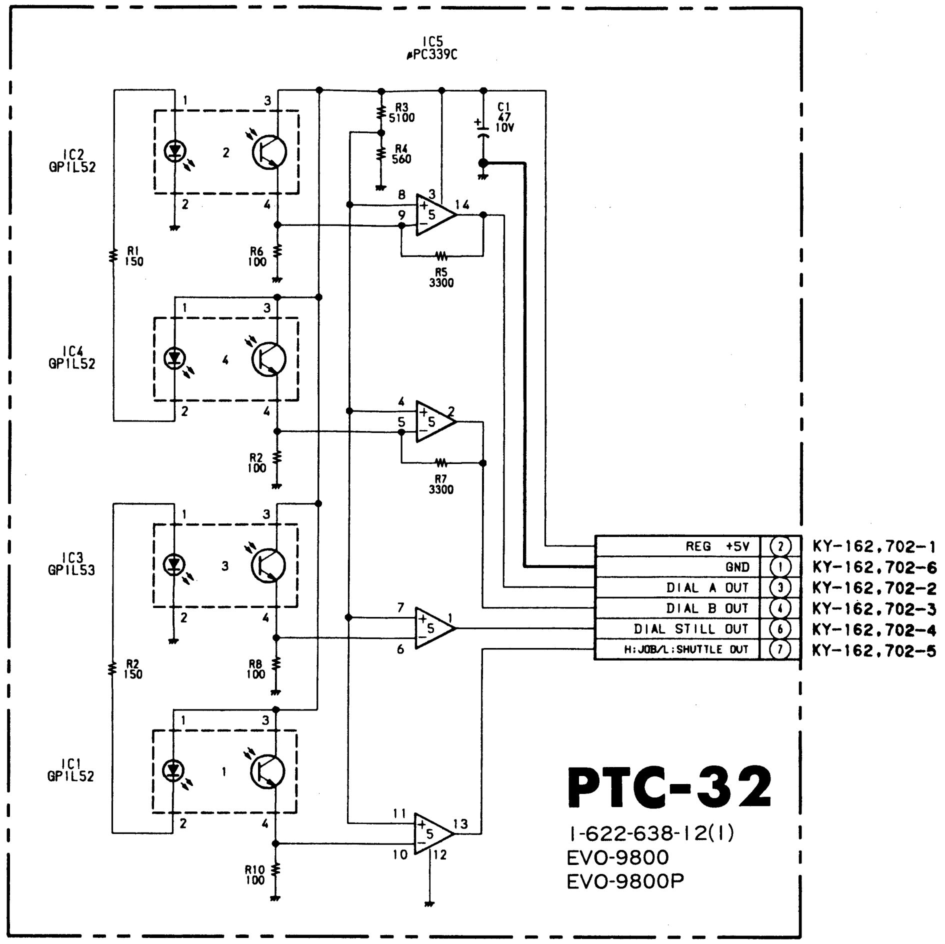
3

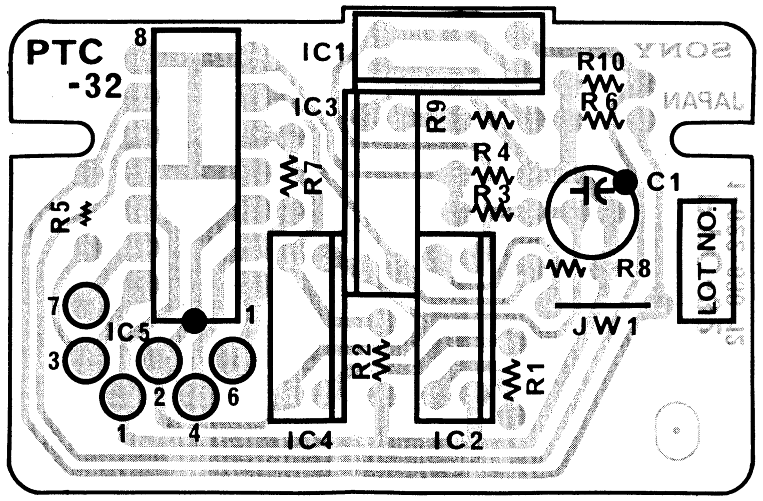
4

5

A B C D E F G H

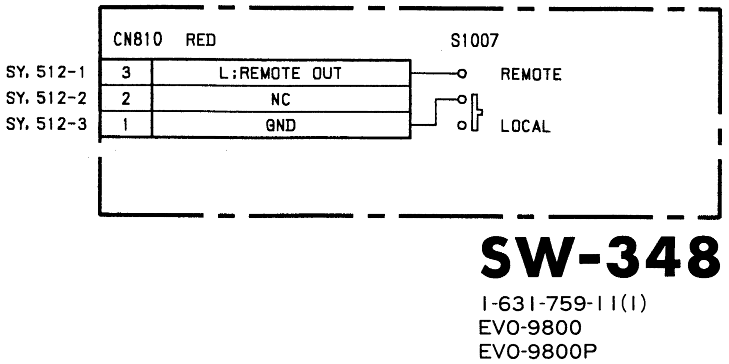
PTC-32 ; SEARCH DIAL

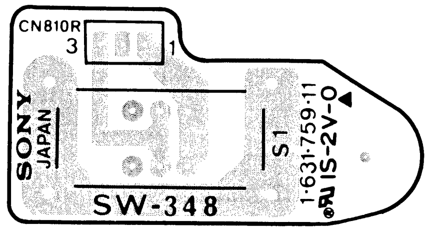

IC5
µPC339C
IC2
GP1L52
IC4
GP1L52
IC3
GP1L53
IC1
GP1L52
R1
150
R2
150
R3
5100
R4
560
R5
3300
R6
100
R2
100
R7
3300
R8
100
R10
100
C1
47
10V
REG +5V ②
GND ①
DIAL A OUT ③
DIAL B OUT ④
DIAL STILL OUT ⑥
H:JOB/L:SHUTTLE OUT ⑦
KY-162,702-1
KY-162,702-6
KY-162,702-2
KY-162,702-3
KY-162,702-4
KY-162,702-5
PTC-32
1-622-638-12(1)
EVO-9800
EVO-9800P


PTC
-32
IC1
IC3
IC5
IC4
IC2
R10
R6
R9
R4
R3
R7
R5
R2
R1
R8
C1
JW1
LOT NO.
SONY
JAPAN
1
2
3
4
6
7
8

PTC-32 —COMPONENT SIDE—
1-622-638-12(1)
EVO-9800
EVO-9800P

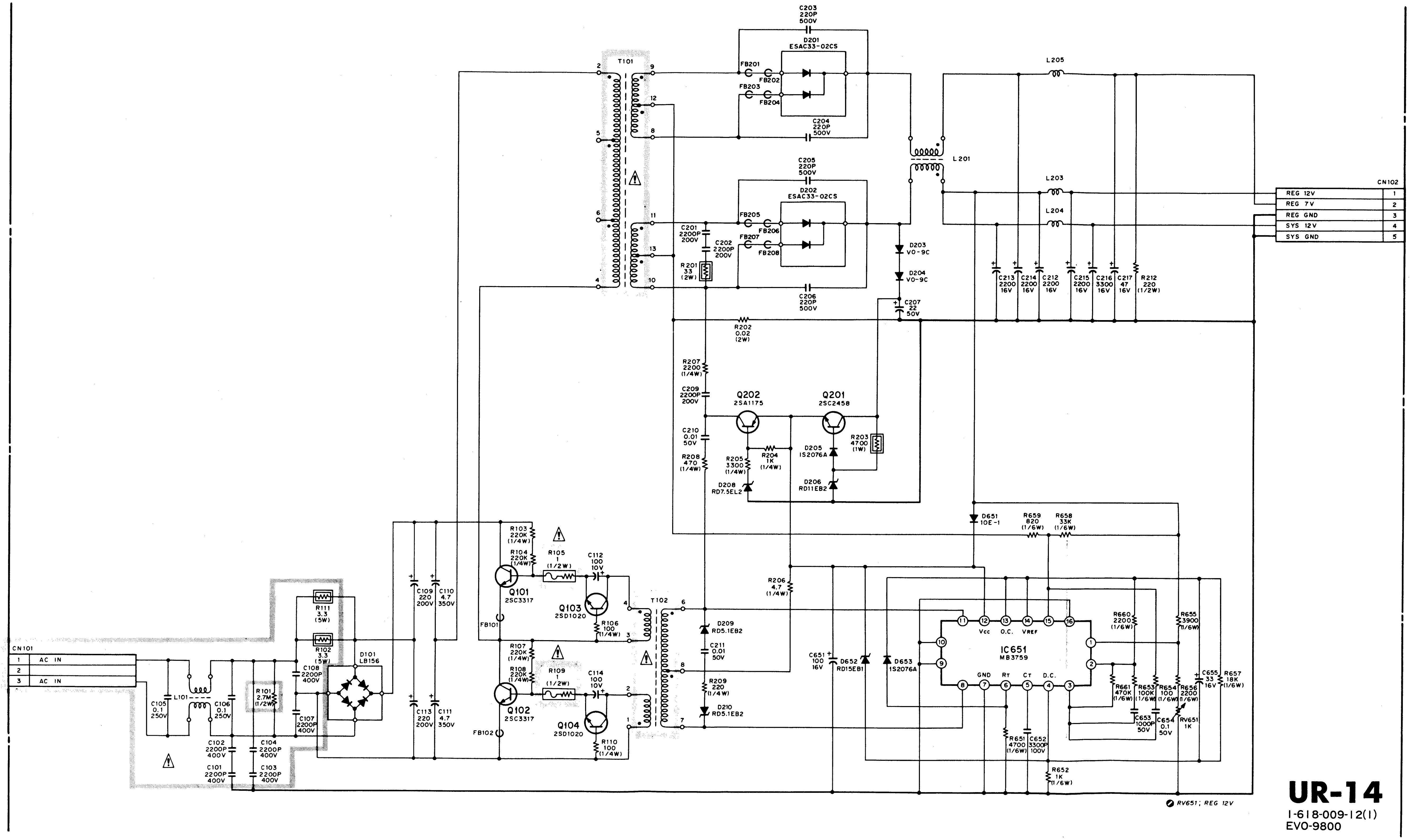
SW-348 ; REMOTE PANEL SWITCH


CN810 RED
S1007
SY, 512-1
SY, 512-2
SY, 512-3
3 L:REMOTE OUT
2 NC
1 GND
REMOTE
LOCAL
SW-348
1-631-759-11(1)
EVO-9800
EVO-9800P


CN810R
3
1
SONY
JAPAN
S1
SW-348
1-631-759-11
IS-2V-0

SW-348 —SOLDERING SIDE—
1-631-759-11(1)
EVO-9800
EVO-9800P

UR-14; SWITCHING REGULATOR

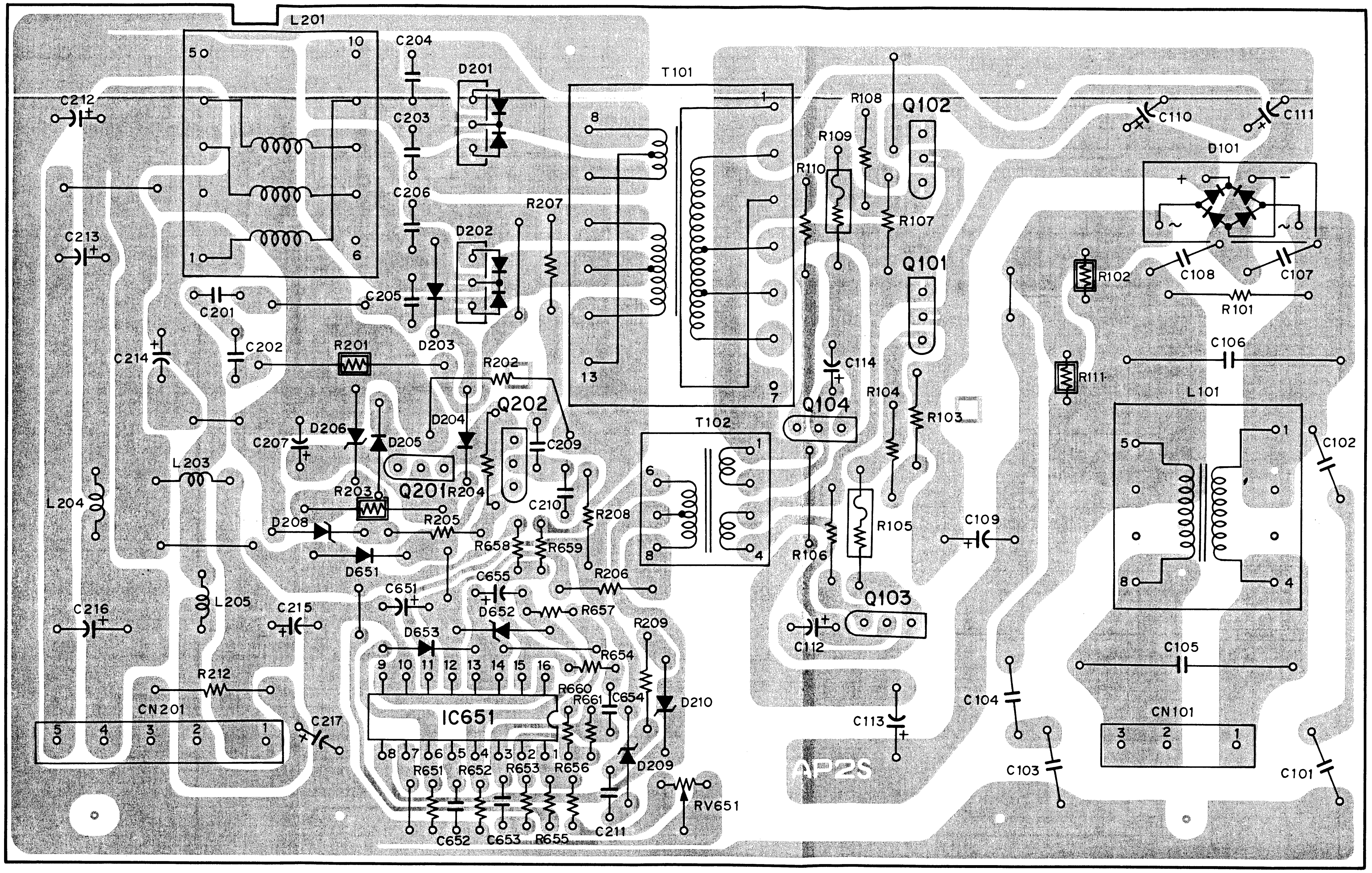

T101
C203 220P 500V
D201 ESAC33-02CS
FB201
FB202
FB203
FB204
C204 220P 500V
C205 220P 500V
D202 ESAC33-02CS
FB205
FB206
FB207
FB208
C206 220P 500V
C201 2200P 200V
C202 2200P 200V
R201 33 (2W)
L205
L201
L203
L204
D203 V0-9C
D204 V0-9C
C207 22 50V
C213 2200 16V
C214 2200 16V
C212 2200 16V
C215 2200 16V
C216 3300 16V
C217 47 16V
R212 220 (1/2W)
CN102
REG 12V 1
REG 7V 2
REG GND 3
SYS 12V 4
SYS GND 5
R202 0.02 (2W)
R207 2200 (1/4W)
C209 2200P 200V
Q202 2SA1175
Q201 2SC2458
C210 0.01 50V
R208 470 (1/4W)
R205 3300 (1/4W)
R204 1K (1/4W)
D205 1S2076A
R203 4700 (1W)
D206 RD11EB2
D208 RD7.5EL2
D651 10E-1
R659 820 (1/6W)
R658 33K (1/6W)
R103 220K (1/4W)
R104 220K (1/4W)
R105 1 (1/2W)
C112 100 10V
Q101 2SC3317
Q103 2SD1020
R106 100 (1/4W)
FB101
T102
R206 4.7 (1/4W)
D209 RD5.1EB2
C211 0.01 50V
R209 220 (1/4W)
D210 RD5.1EB2
R107 220K (1/4W)
R108 220K (1/4W)
R109 1 (1/2W)
C114 100 10V
Q102 2SC3317
Q104 2SD1020
R110 100 (1/4W)
FB102
C109 220 200V
C110 4.7 350V
C113 220 200V
C111 4.7 350V
CN101
1 AC IN
2
3 AC IN
C105 0.1 250V
L101
C106 0.1 250V
R101 2.7M (1/2W)
R111 3.3 (5W)
R102 3.3 (5W)
C108 2200P 400V
D101 LB156
C107 2200P 400V
C102 2200P 400V
C104 2200P 400V
C101 2200P 400V
C103 2200P 400V
C651 100 16V
D652 RD15EB1
D653 1S2076A
IC651 MB3759
Vcc O.C. VREF
GND RT CT D.C.
R660 2200 (1/6W)
R655 3900 (1/6W)
R661 470K (1/6W)
R653 100K (1/6W)
R654 100 (1/6W)
R656 2200 (1/6W)
C655 33 16V
R657 18K (1/6W)
C653 1000P 50V
C654 0.1 50V
RV651 1K
R651 4700 (1/6W)
C652 3300P 100V
R652 1K (1/6W)
RV651; REG 12V

UR-14
1-618-009-12(1)
EVO-9800

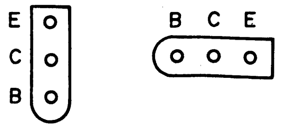
注意１：⚠印のついた部品は安全性を維持するために重要な部品です。従って交換する時は必ず指定の部品を使って下さい。

NOTE:
The ⚠-marked components are critical to sefety.
Replace only with same components as specified.

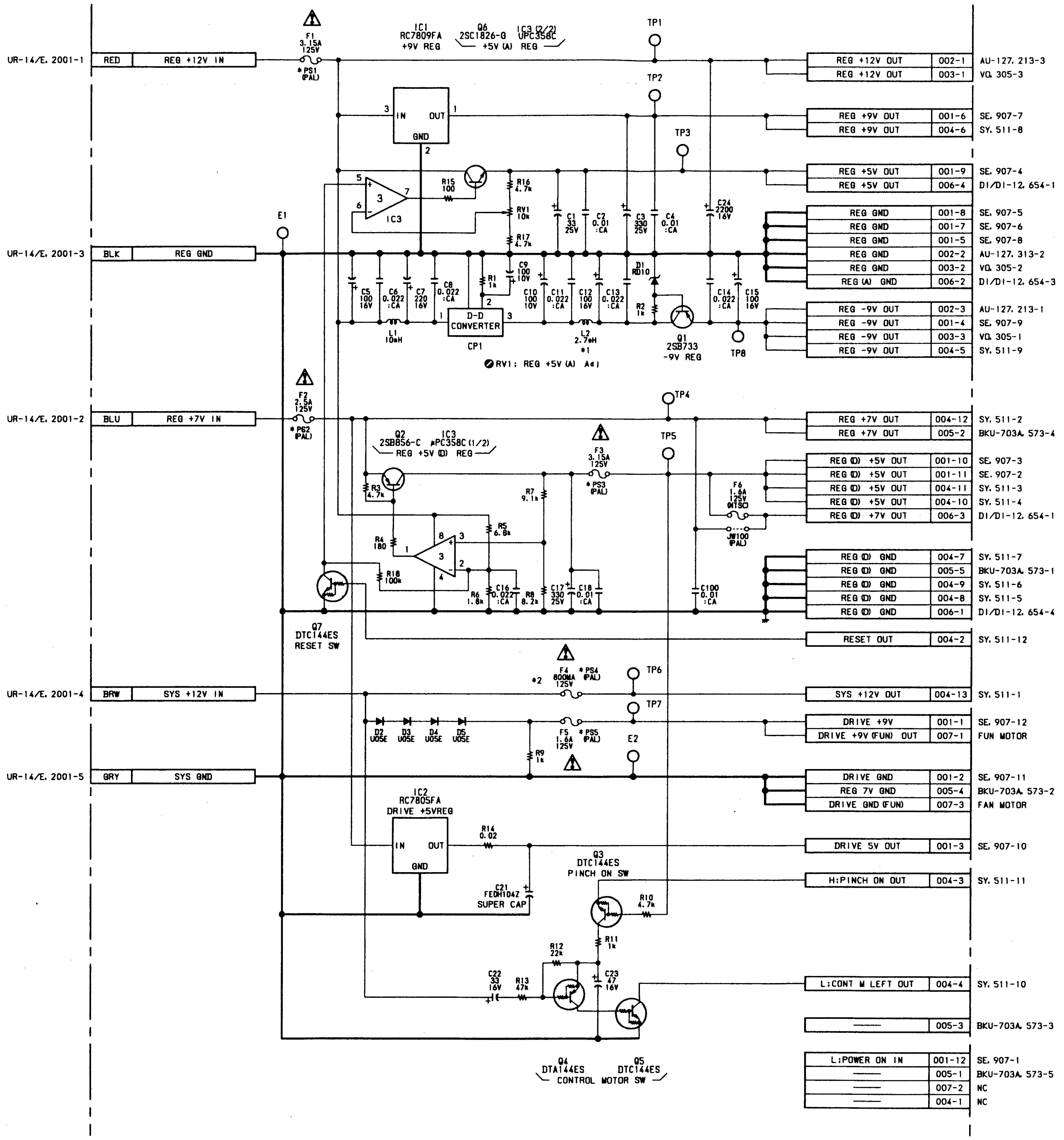
UR-14; SWITCHING REGULATOR


L201
C204
D201
T101
C212
C203
R108
Q102
C110
C111
R109
D101
R110
C206
R207
C213
D202
R107
Q101
R102
C108
C107
C201
C205
D203
R101
C114
C202
R201
C214
R202
C106
R111
Q202
R104
Q104
R103
L101
T102
C207
D206
D205
D204
C209
C102
L203
Q201
R204
L204
R203
C210
R208
C109
D208
R205
R105
R658
R659
D651
R106
C655
R206
C651
Q103
C216
L205
C215
D652
R657
D653
C112
R209
C105
R654
R212
R660
R661
C654
D210
C104
C113
CN101
CN201
IC651
C217
C103
C101
R651
R652
R653
R656
D209
RV651
C652
C653
R655
C211
AP2S

UR-14 —SOLDERING SIDE—
1-618-009-12
EVO-9800



DC-45 ; DC SUPPLY


UR-14/E. 2001-1
RED
REG +12V IN
UR-14/E. 2001-3
BLK
REG GND
UR-14/E. 2001-2
BLU
REG +7V IN
UR-14/E. 2001-4
BRW
SYS +12V IN
UR-14/E. 2001-5
GRY
SYS GND
F1 3.15A 125V
*PS1 (PAL)
IC1 RC7809FA +9V REG
Q6 2SC1826-G
IC3 (2/2) UPC358C
+5V (A) REG
IN
OUT
GND
IC3
R15 100
R16 4.7k
RV1 10k
R17 4.7k
E1
C1 33 25V
C2 0.01 :CA
C3 330 25V
C4 0.01 :CA
C24 2200 16V
TP1
TP2
TP3
C5 100 16V
C6 0.022 :CA
C7 220 16V
C8 0.022 :CA
R1 1k
C9 100 10V
C10 100 10V
C11 0.022 :CA
C12 100 16V
C13 0.022 :CA
D1 RD10
R2 1k
C14 0.022 :CA
C15 100 16V
L1 10mH
D-D CONVERTER
CP1
L2 2.7mH *1
Q1 2SB733 -9V REG
TP8
RV1: REG +5V (A) Adj
F2 2.5A 125V
*PS2 (PAL)
Q2 2SB856-C
IC3 µPC358C (1/2)
REG +5V (D) REG
TP4
TP5
F3 3.15A 125V
*PS3 (PAL)
R3 4.7k
R7 9.1k
F6 1.6A 125V (NTSC)
JW100 (PAL)
R4 180
R5 6.8k
R18 100k
R6 1.8k
C16 0.022 :CA
R8 8.2k
C17 330 25V
C18 0.01 :CA
C100 0.01 :CA
Q7 DTC144ES RESET SW
*2
F4 800MA 125V
*PS4 (PAL)
TP6
TP7
D2 U05E
D3 U05E
D4 U05E
D5 U05E
F5 1.6A 125V
*PS5 (PAL)
R9 1k
E2
IC2 RC7805FA DRIVE +5VREG
R14 0.02
C21 FEDH104Z SUPER CAP
Q3 DTC144ES PINCH ON SW
R10 4.7k
R11 1k
R12 22k
C22 33 16V
R13 47k
C23 47 16V
Q4 DTA144ES
Q5 DTC144ES
CONTROL MOTOR SW
REG +12V OUT 002-1 AU-127. 213-3
REG +12V OUT 003-1 VO. 305-3
REG +9V OUT 001-6 SE. 907-7
REG +9V OUT 004-6 SY. 511-8
REG +5V OUT 001-9 SE. 907-4
REG +5V OUT 006-4 DI/DI-12. 654-1
REG GND 001-8 SE. 907-5
REG GND 001-7 SE. 907-6
REG GND 001-5 SE. 907-8
REG GND 002-2 AU-127. 313-2
REG GND 003-2 VO. 305-2
REG (A) GND 006-2 DI/DI-12. 654-3
REG -9V OUT 002-3 AU-127. 213-1
REG -9V OUT 001-4 SE. 907-9
REG -9V OUT 003-3 VO. 305-1
REG -9V OUT 004-5 SY. 511-9
REG +7V OUT 004-12 SY. 511-2
REG +7V OUT 005-2 BKU-703A. 573-4
REG (D) +5V OUT 001-10 SE. 907-3
REG (D) +5V OUT 001-11 SE. 907-2
REG (D) +5V OUT 004-11 SY. 511-3
REG (D) +5V OUT 004-10 SY. 511-4
REG (D) +7V OUT 006-3 DI/DI-12. 654-1
REG (D) GND 004-7 SY. 511-7
REG (D) GND 005-5 BKU-703A. 573-1
REG (D) GND 004-9 SY. 511-6
REG (D) GND 004-8 SY. 511-5
REG (D) GND 006-1 DI/DI-12. 654-4
RESET OUT 004-2 SY. 511-12
SYS +12V OUT 004-13 SY. 511-1
DRIVE +9V 001-1 SE. 907-12
DRIVE +9V (FUN) OUT 007-1 FUN MOTOR
DRIVE GND 001-2 SE. 907-11
REG 7V GND 005-4 BKU-703A. 573-2
DRIVE GND (FUN) 007-3 FAN MOTOR
DRIVE 5V OUT 001-3 SE. 907-10
H:PINCH ON OUT 004-3 SY. 511-11
L:CONT M LEFT OUT 004-4 SY. 511-10
—— 005-3 BKU-703A. 573-3
L:POWER ON IN 001-12 SE. 907-1
—— 005-1 BKU-703A. 573-5
—— 007-2 NC
—— 004-1 NC

NOTE:

MARK	CHANGE INFORMATION	SERIAL NO
*1	L2 CHANGED 10mH → 2.7mH	J:10011- UC:10041-
*2	F4 CHANGED 0.08A → 0.8A	J:10331- UC:10871-

NOTE) *···for PAL model

NTSC/PAL

NTSC REF.	NTSC P No.	PAL REF.	PAL P No.
F1	1-532-781-21	PS1	1-532-844-21
F2	1-532-701-11	PS2	1-532-286-11
F3	1-532-781-21	PS3	1-532-844-21
F4	1-532-775-21	PS4	1-532-838-21
F5	1-532-778-21	PS5	1-532-841-21
F6	1-532-778-21		:NM

NOTE) Mount JW100
only PAL model.

DC-45

1-631-800-11, 12, 13, 14(2)
EVO-9800

注意１：⚠印のついた部品は安全性を維持するため に重要な部品です。従って交換する時は必ず 指定の部品を使って下さい。

NOTE:
The ⚠-marked components are critical to sefety.
Replace only with same components as specified.

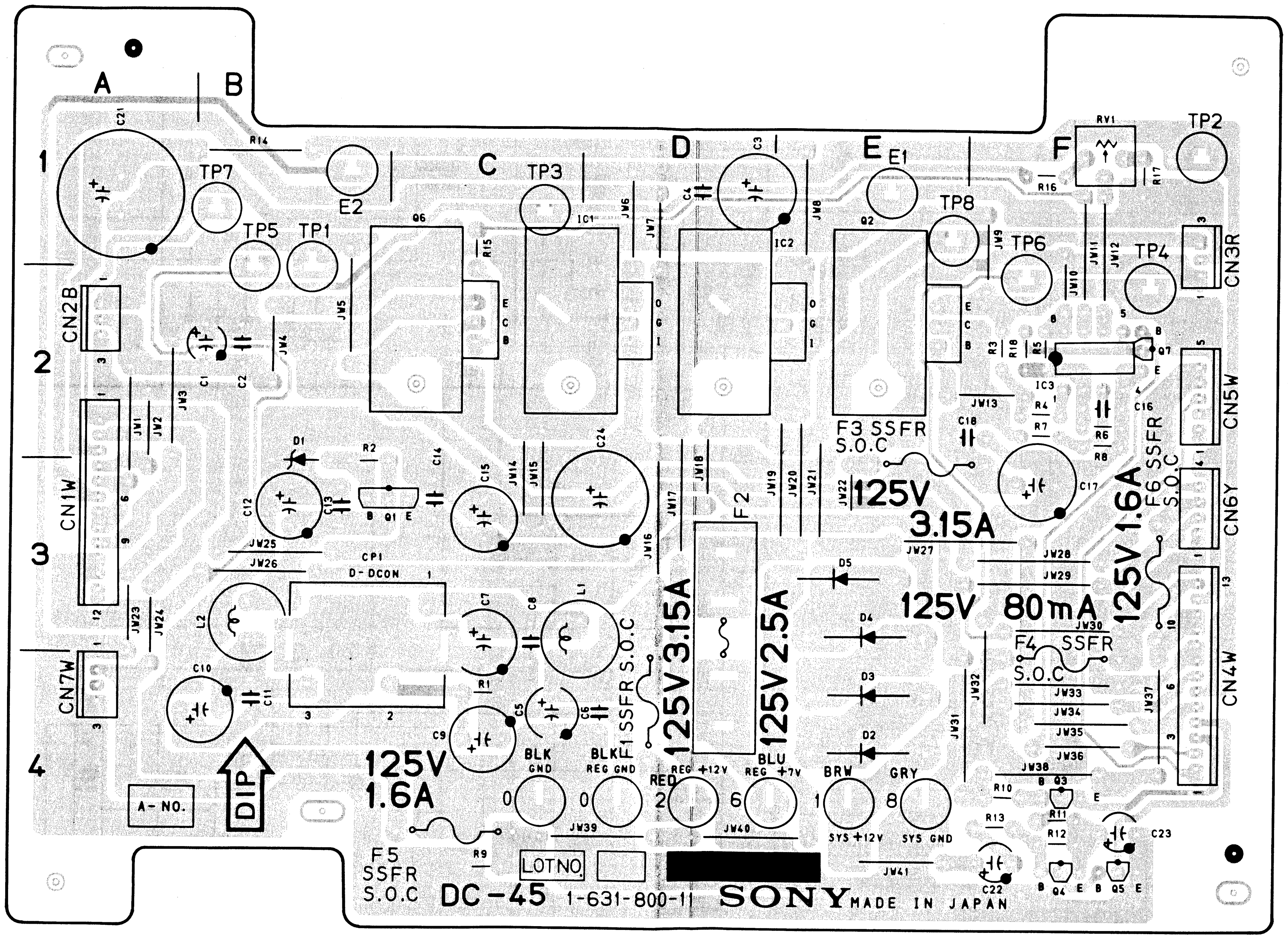
DC-45; DC SUPPLY

S/N UP TO 10380 (J)
S/N UP TO 11670 (UC)

DC-45(1-631-800-11,12) C

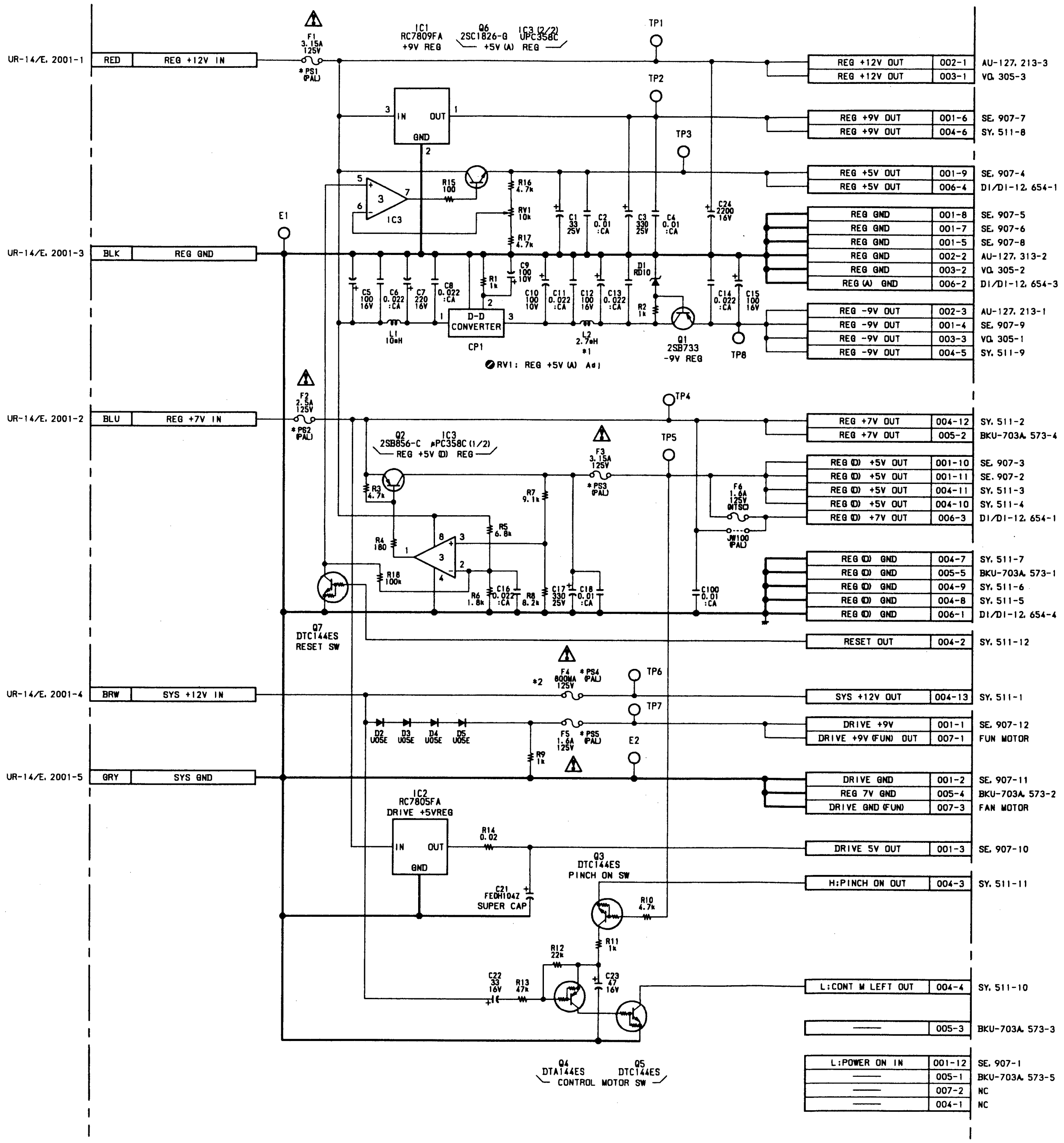
CN1	A-3
CN2	A-2
CN3	F-1
CN4	F-4
CN5	F-2
CN6	F-3
CN7	A-4
CP1	B-3
D1	B-2
D2	E-4
D3	E-4
D4	E-3
D5	E-3
E1	E-1S
E2	B-1S
F1	D-4
F2	D-3
F3	E-2
F4	F-3
F5	C-4
F6	F-3
IC1	D-1
IC2	E-1
IC3	F-2
Q1	C-3
Q2	E-1
Q3	F-4
Q4	F-4
Q5	F-4
Q6	C-1
Q7	F-2
RV1	F-1
TP1	B-1S
TP2	F-1S
TP3	C-1S
TP4	F-1S
TP5	B-1S
TP6	F-1S
TP7	B-1S
TP8	E-1S

S: SOLDERING SIDE


A
B
C
D
E
F
1
2
3
4
CN1W
CN2B
CN7W
CN3R
CN5W
CN6Y
CN4W
C21
TP7
TP5
TP1
TP3
TP8
TP6
TP4
TP2
E1
E2
R14
Q6
IC1
IC2
Q2
RV1
R16
R17
Q7
IC3
D1
R2
Q1
C24
CP1
D-DCON
L1
L2
F1 SSFR S.O.C
125V 3.15A
F2
125V 2.5A
F3 SSFR S.O.C
125V
3.15A
125V 80mA
F4 SSFR S.O.C
F6 SSFR S.O.C
125V 1.6A
D5
D4
D3
D2
125V
1.6A
F5
SSFR
S.O.C
BLK GND
BLK REG GND
RED REG +12V
BLU REG +7V
BRW SYS +12V
GRY SYS GND
0
0
2
6
1
8
A-NO.
DIP
LOTNO.
DC-45 1-631-800-11
SONY MADE IN JAPAN
Q3
Q4
Q5
C22
C23

DC-45 —COMPONENT SIDE—
1-631-800-11, 12(1)
EVO-9800

DC-45 ; DC SUPPLY


UR-14/E. 2001-1
RED
REG +12V IN
F1
3.15A
125V
*PS1
(PAL)
IC1
RC7809FA
+9V REG
Q6
2SC1826-Q
IC3 (2/2)
UPC358C
+5V (A) REG
TP1
TP2
TP3
IN
OUT
GND
R15
100
R16
4.7k
RV1
10k
R17
4.7k
IC3
E1
UR-14/E. 2001-3
BLK
REG GND
C1
33
25V
C2
0.01
:CA
C3
330
25V
C4
0.01
:CA
C24
2200
16V
C5
100
16V
C6
0.022
:CA
C7
220
16V
C8
0.022
:CA
R1
1k
C9
100
10V
C10
100
10V
C11
0.022
:CA
C12
100
16V
C13
0.022
:CA
D1
RD10
R2
1k
C14
0.022
:CA
C15
100
16V
D-D
CONVERTER
CP1
L1
10mH
L2
2.7mH
*1
Q1
2SB733
-9V REG
TP8
RV1: REG +5V (A) Adj
REG +12V OUT
002-1
AU-127. 213-3
REG +12V OUT
003-1
VQ. 305-3
REG +9V OUT
001-6
SE. 907-7
REG +9V OUT
004-6
SY. 511-8
REG +5V OUT
001-9
SE. 907-4
REG +5V OUT
006-4
DI/DI-12. 654-1
REG GND
001-8
SE. 907-5
REG GND
001-7
SE. 907-6
REG GND
001-5
SE. 907-8
REG GND
002-2
AU-127. 313-2
REG GND
003-2
VQ. 305-2
REG (A) GND
006-2
DI/DI-12. 654-3
REG -9V OUT
002-3
AU-127. 213-1
REG -9V OUT
001-4
SE. 907-9
REG -9V OUT
003-3
VQ. 305-1
REG -9V OUT
004-5
SY. 511-9
UR-14/E. 2001-2
BLU
REG +7V IN
F2
2.5A
125V
*PS2
(PAL)
Q2
2SB856-C
IC3
μPC358C (1/2)
REG +5V (D) REG
R3
4.7k
R4
180
R5
6.8k
R6
1.8k
R7
9.1k
R8
8.2k
R18
100k
C16
0.022
:CA
C17
330
25V
C18
0.01
:CA
Q7
DTC144ES
RESET SW
TP4
TP5
F3
3.15A
125V
*PS3
(PAL)
F6
1.6A
125V
(NTSC)
JW100
(PAL)
C100
0.01
:CA
REG +7V OUT
004-12
SY. 511-2
REG +7V OUT
005-2
BKU-703A. 573-4
REG (D) +5V OUT
001-10
SE. 907-3
REG (D) +5V OUT
001-11
SE. 907-2
REG (D) +5V OUT
004-11
SY. 511-3
REG (D) +5V OUT
004-10
SY. 511-4
REG (D) +7V OUT
006-3
DI/DI-12. 654-1
REG (D) GND
004-7
SY. 511-7
REG (D) GND
005-5
BKU-703A. 573-1
REG (D) GND
004-9
SY. 511-6
REG (D) GND
004-8
SY. 511-5
REG (D) GND
006-1
DI/DI-12. 654-4
RESET OUT
004-2
SY. 511-12
UR-14/E. 2001-4
BRW
SYS +12V IN
*2
F4
800MA
125V
*PS4
(PAL)
TP6
TP7
D2
U05E
D3
U05E
D4
U05E
D5
U05E
F5
1.6A
125V
*PS5
(PAL)
R9
1k
E2
SYS +12V OUT
004-13
SY. 511-1
DRIVE +9V
001-1
SE. 907-12
DRIVE +9V (FUN) OUT
007-1
FUN MOTOR
UR-14/E. 2001-5
GRY
SYS GND
DRIVE GND
001-2
SE. 907-11
REG 7V GND
005-4
BKU-703A. 573-2
DRIVE GND (FUN)
007-3
FAN MOTOR
IC2
RC7805FA
DRIVE +5VREG
R14
0.02
C21
FEDH104Z
SUPER CAP
DRIVE 5V OUT
001-3
SE. 907-10
Q3
DTC144ES
PINCH ON SW
R10
4.7k
R11
1k
R12
22k
R13
47k
C22
33
16V
C23
47
16V
H:PINCH ON OUT
004-3
SY. 511-11
L:CONT M LEFT OUT
004-4
SY. 511-10
005-3
BKU-703A. 573-3
Q4
DTA144ES
Q5
DTC144ES
CONTROL MOTOR SW
L:POWER ON IN
001-12
SE. 907-1
005-1
BKU-703A. 573-5
007-2
NC
004-1
NC

NOTE:

MARK	CHANGE INFORMATION	SERIAL NO
*1	L2 CHANGED 10mH → 2.7mH	J:10011- UC:10041-
*2	F4 CHANGED 0.08A → 0.8A	J:10331- UC:10871-

NOTE) *・・・for PAL model

NTSC/PAL

NTSC REF.	NTSC P No.	PAL REF.	PAL P No.
F1	1-532-781-21	PS1	1-532-844-21
F2	1-532-701-11	PS2	1-532-286-11
F3	1-532-781-21	PS3	1-532-844-21
F4	1-532-775-21	PS4	1-532-838-21
F5	1-532-778-21	PS5	1-532-841-21
F6	1-532-778-21		:NM

NOTE) Mount JW100
only PAL model.

DC-45

1-631-800-11, 12, 13, 14(2)
EVO-9800

注意1：⚠印のついた部品は安全性を維持するために重要な部品です。従って交換する時は必ず指定の部品を使って下さい。

NOTE:
The ⚠-marked components are critical to sefety.
Replace only with same components as specified.

DC-45 ; DC SUPPL

S/N 10381 AND HI
S/N 11671 AND HI

DC-45(1-631-800-13,14) C

CN1	A-3
CN2	A-2
CN3	F-1
CN4	F-4
CN5	F-2
CN6	F-3
CN7	A-4
CP1	B-3
D1	B-2
D2	E-4
D3	E-4
D4	E-3
D5	E-3
E1	E-1S
E2	B-1S
F1	D-4
F2	D-3
F3	E-2
F4	F-3
F5	C-4
F6	F-3
IC1	D-1
IC2	D-1
IC3	F-2
Q1	C-3
Q2	E-1
Q3	F-4
Q4	F-4
Q5	F-4
Q6	C-1
Q7	F-2
RV1	F-1
TP1	B-1S
TP2	F-1S
TP3	C-1S
TP4	F-1S
TP5	B-1S
TP6	F-1S
TP7	B-1S
TP8	E-1S

S: SOLDERING SIDE

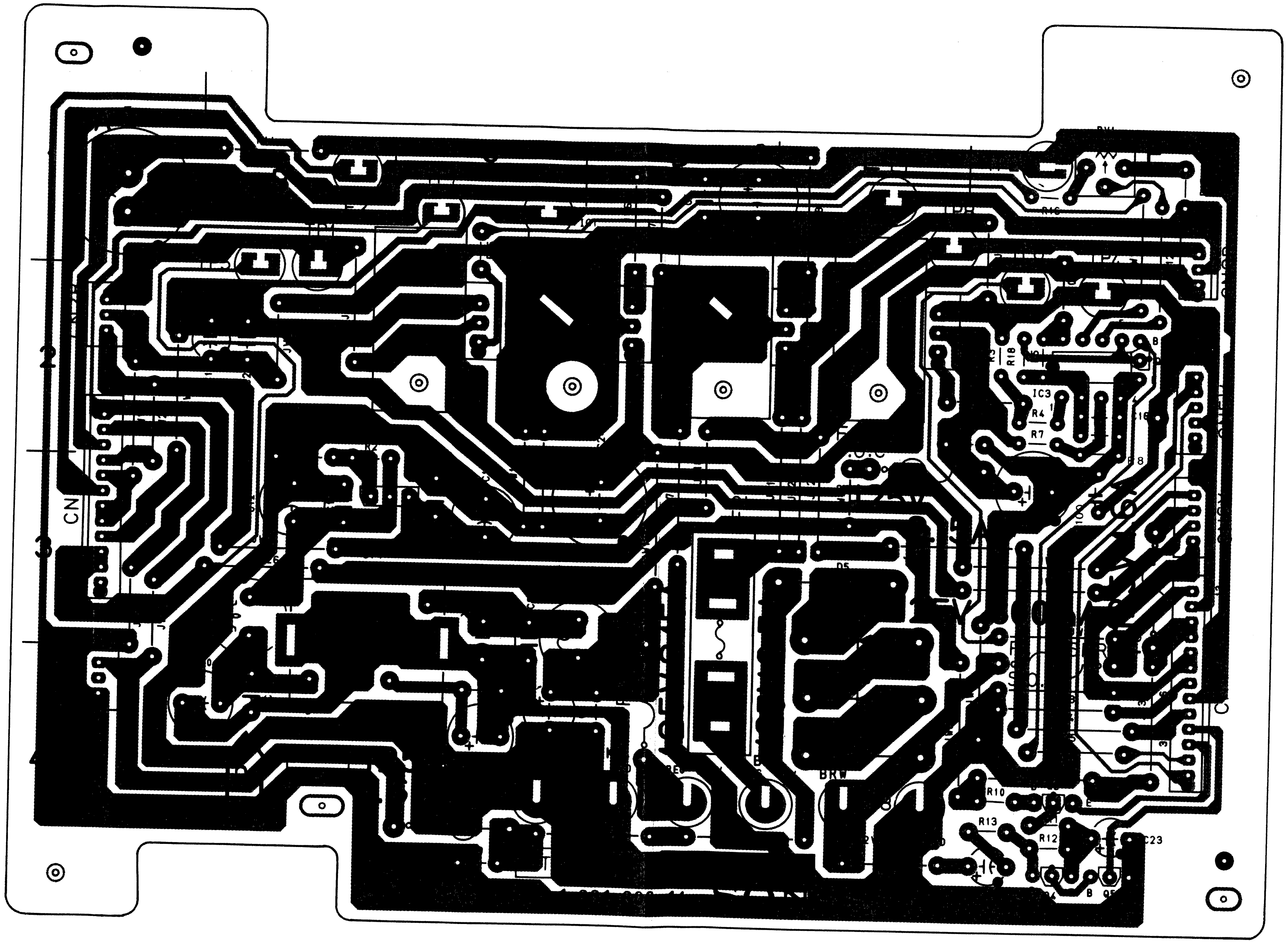
DC-45 ; DC SUPPLY

S/N 10381 AND HIGHER (J)
S/N 11671 AND HIGHER (UC)

DC-45(1-631-800-13,14) C

CN1	A-3
CN2	A-2
CN3	F-1
CN4	F-4
CN5	F-2
CN6	F-3
CN7	A-4
CP1	B-3
D1	B-2
D2	E-4
D3	E-4
D4	E-3
D5	E-3
E1	E-1S
E2	B-1S
F1	D-4
F2	D-3
F3	E-2
F4	F-3
F5	C-4
F6	F-3
IC1	D-1
IC2	D-1
IC3	F-2
Q1	C-3
Q2	E-1
Q3	F-4
Q4	F-4
Q5	F-4
Q6	C-1
Q7	F-2
RV1	F-1
TP1	B-1S
TP2	F-1S
TP3	C-1S
TP4	F-1S
TP5	B-1S
TP6	F-1S
TP7	B-1S
TP8	E-1S

S: SOLDERING SIDE



DC-45 COMPONENT SIDE
1-631-800-13, 14(1)
EVO-9800

FRAME (1/2)

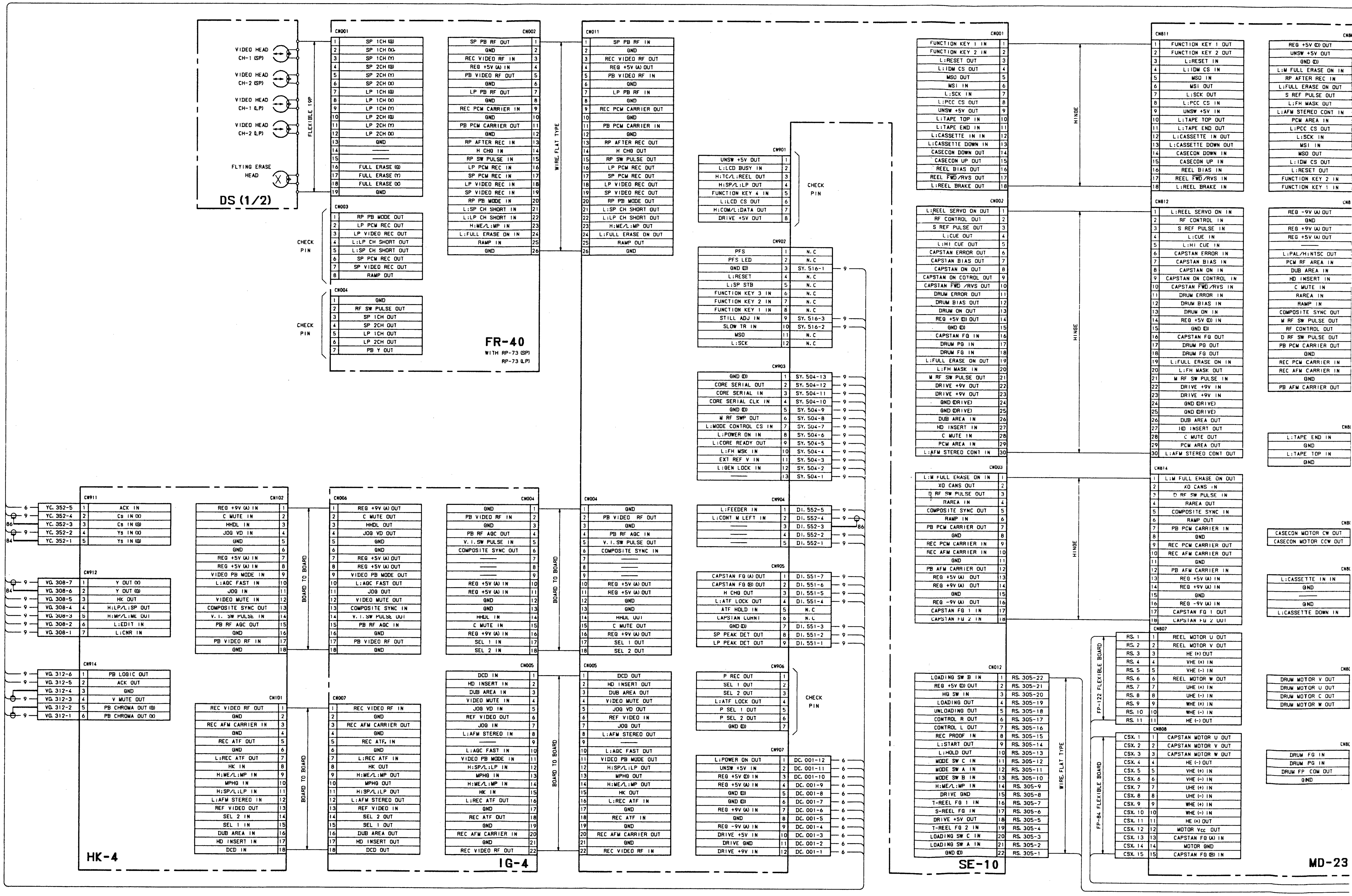
1

2

3

4

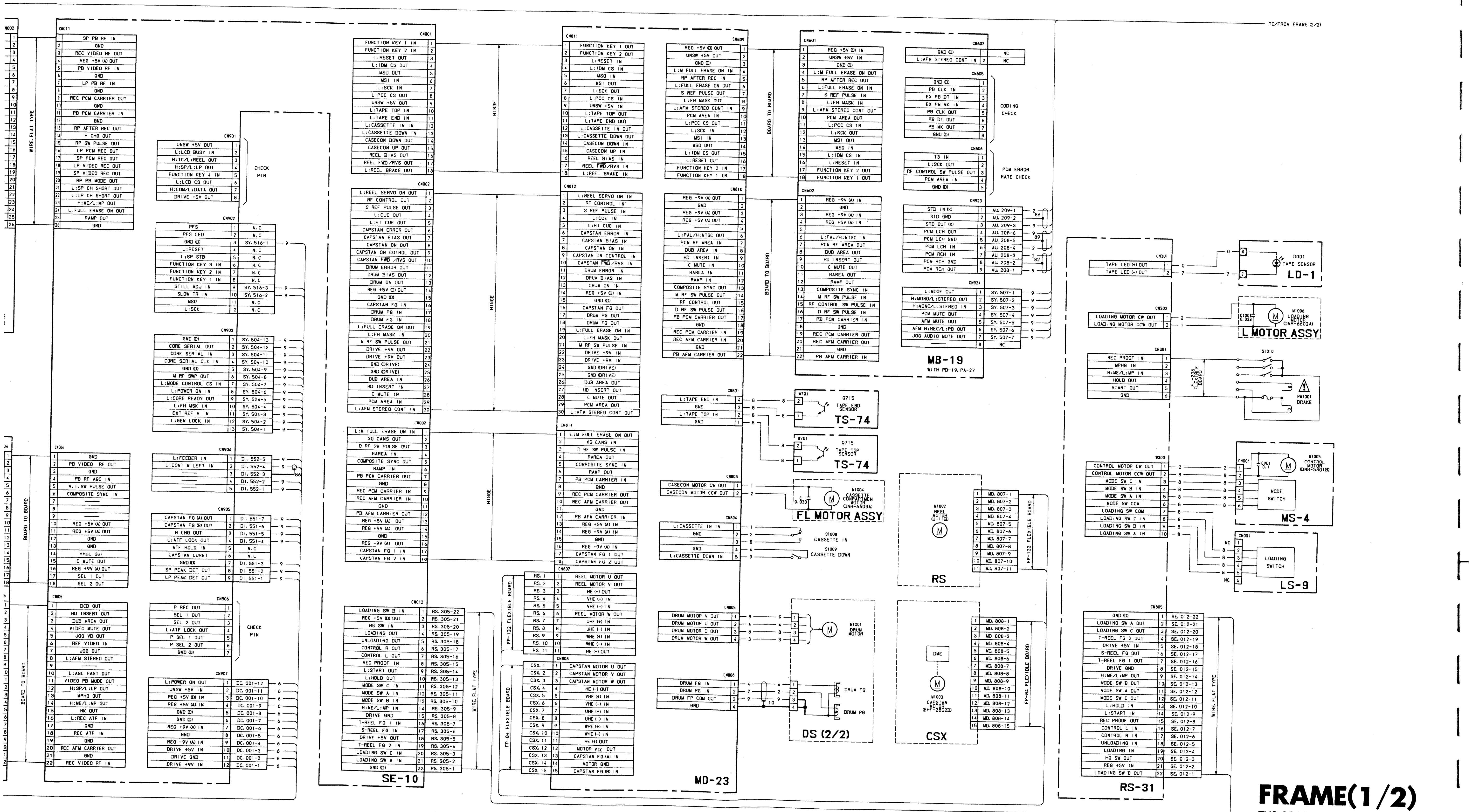
5


DS (1/2)
VIDEO HEAD CH-1 (SP)
VIDEO HEAD CH-2 (SP)
VIDEO HEAD CH-1 (LP)
VIDEO HEAD CH-2 (LP)
FLYING ERASE HEAD
FLEXIBLE 19P
FR-40
WITH RP-73 (SP)
RP-73 (LP)
CN001
CN002
CN003
CN004
CHECK PIN
WIRE FLAT TYPE
CN011
CN901
CN902
CN903
CN904
CN905
CN906
CN907
HK-4
CN911
CN912
CN914
CN101
CN102
IG-4
CN006
CN007
CN004
CN005
BOARD TO BOARD
SE-10
CN001
CN002
CN003
CN012
HINGE
MD-23
CN811
CN812
CN814
CN807
CN808
FP-122 FLEXIBLE BOARD
FP-84 FLEXIBLE BOARD

注意１：⚠印のついた部品は安全性を維持するため
に重要な部品です。従って交換する時は必ず
指定の部品を使って下さい。

NOTE:
The ⚠-marked components are critical to sefety.
Replace only with same components as specified.

A | B | C | D | E | F | G | H

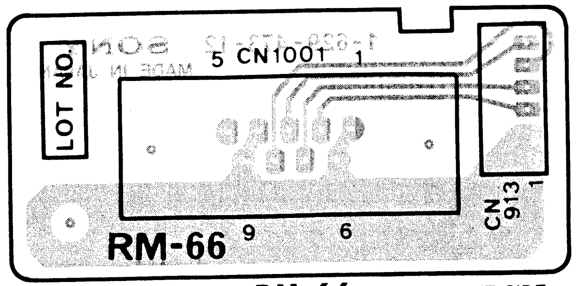

TO/FROM FRAME (2/2)
CN011
SP PB RF IN
REC VIDEO RF OUT
REG +5V (A) OUT
PB VIDEO RF IN
LP PB RF IN
REC PCM CARRIER OUT
PB PCM CARRIER IN
RP AFTER REC OUT
H CHG OUT
RP SW PULSE OUT
LP PCM REC OUT
SP PCM REC OUT
LP VIDEO REC OUT
SP VIDEO REC OUT
RP PB MODE OUT
L:SP CH SHORT OUT
L:LP CH SHORT OUT
H:ME/L:MP OUT
L:FULL ERASE ON OUT
RAMP OUT
GND
WIRE FLAT TYPE
CN901
CHECK PIN
CN902
CN903
CN904
CN905
CN906
CN907
CN004
CN005
BOARD TO BOARD
CN001
CN002
CN003
CN012
HINGE
SE-10
CN811
CN812
CN814
CN807
CN808
CN809
CN810
CN801
CN803
CN804
CN805
CN806
FP-122 FLEXIBLE BOARD
FP-84 FLEXIBLE BOARD
MD-23
CN601
CN602
CN603
CN605
CN606
CN923
CN924
CODING CHECK
PCM ERROR RATE CHECK
MB-19
WITH PD-19, PA-27
Q715 TAPE END SENSOR
TS-74
Q715 TAPE TOP SENSOR
TS-74
M1004 CASSETTE COMPARTMENT MOTOR (NR-6603A)
FL MOTOR ASSY
S1008 CASSETTE IN
S1009 CASSETTE DOWN
M1001 DRUM MOTOR
DRUM FG
DRUM PG
DS (2/2)
M1002 REEL MOTOR
RS
DME
M1003 CAPSTAN MOTOR (BHF-2802B)
CSX
CN301
D001 TAPE SENSOR
LD-1
CN302
M1006 LOADING MOTOR (NR-6602A)
L MOTOR ASSY
CN304
S1010
FL-226 FLEXIBLE BOARD
PW1001 BRAKE
CN303
M1005 CONTROL MOTOR (NR-5301B)
MODE SWITCH
MS-4
LOADING SWITCH
LS-9
CN305
RS-31

FRAME(1/2)

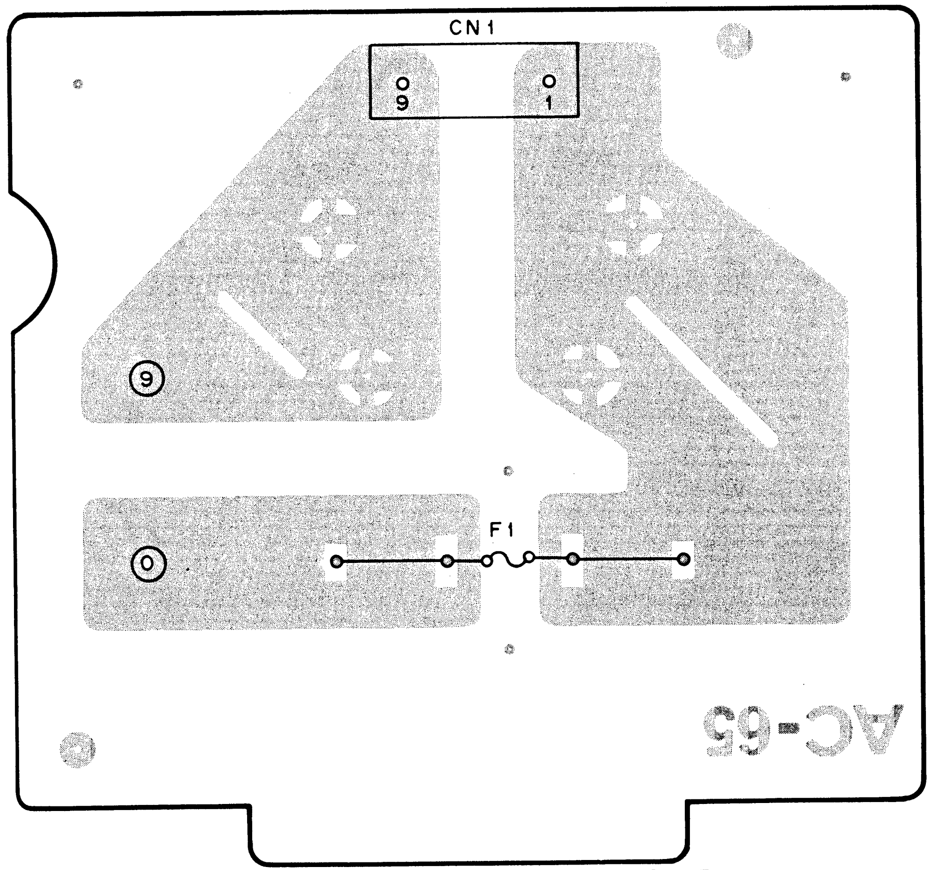
EVO-9800

; REMOTE CONNECTOR

; LINE FILTER

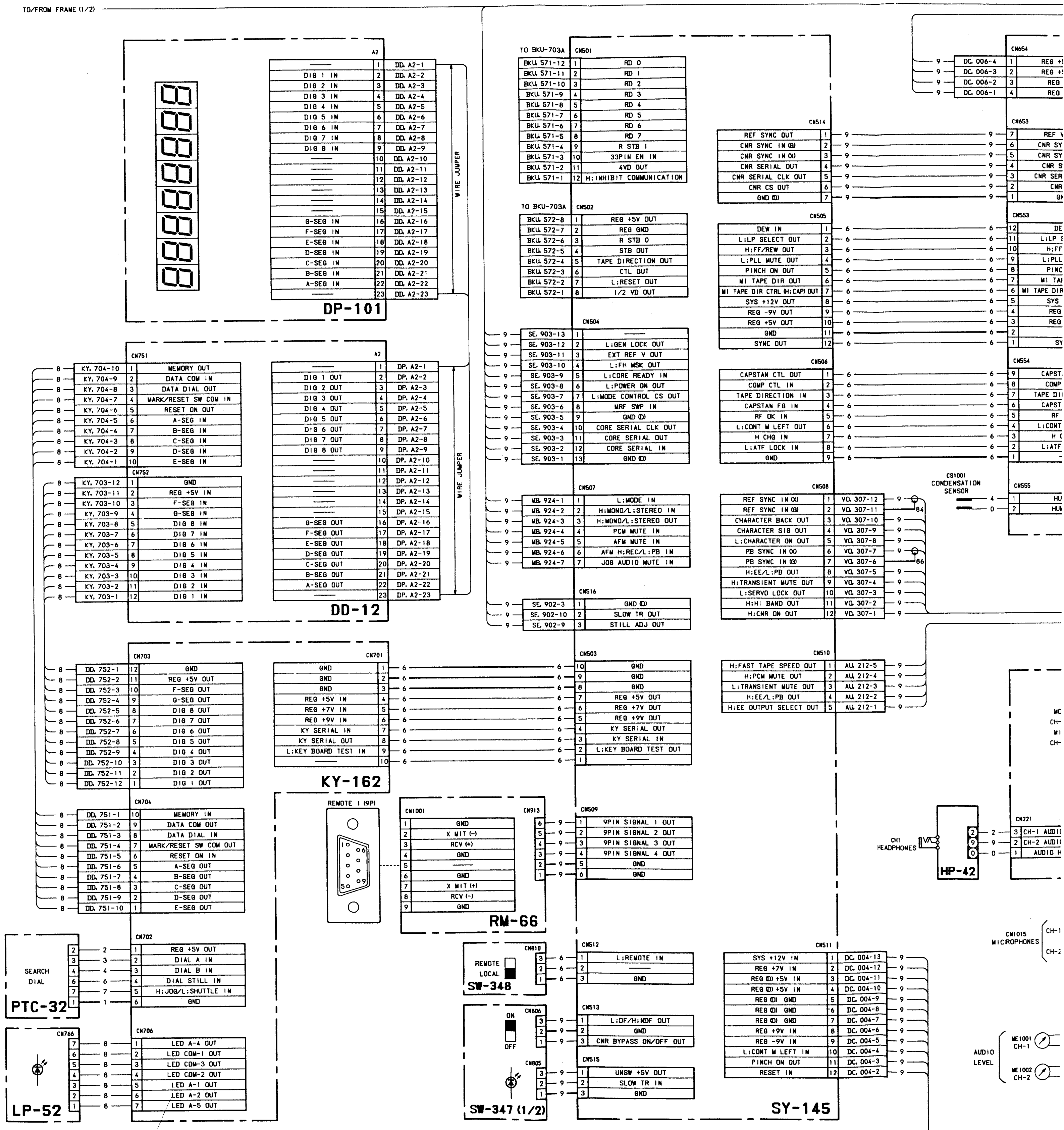

LOT NO.
5 CN1001 1
CN 913
1
RM-66
9
6

RM-66 —COMPONENT SIDE—
1-629-473-12(1)
EVO-9800


CN1
9
1
9
0
F1
AC-65

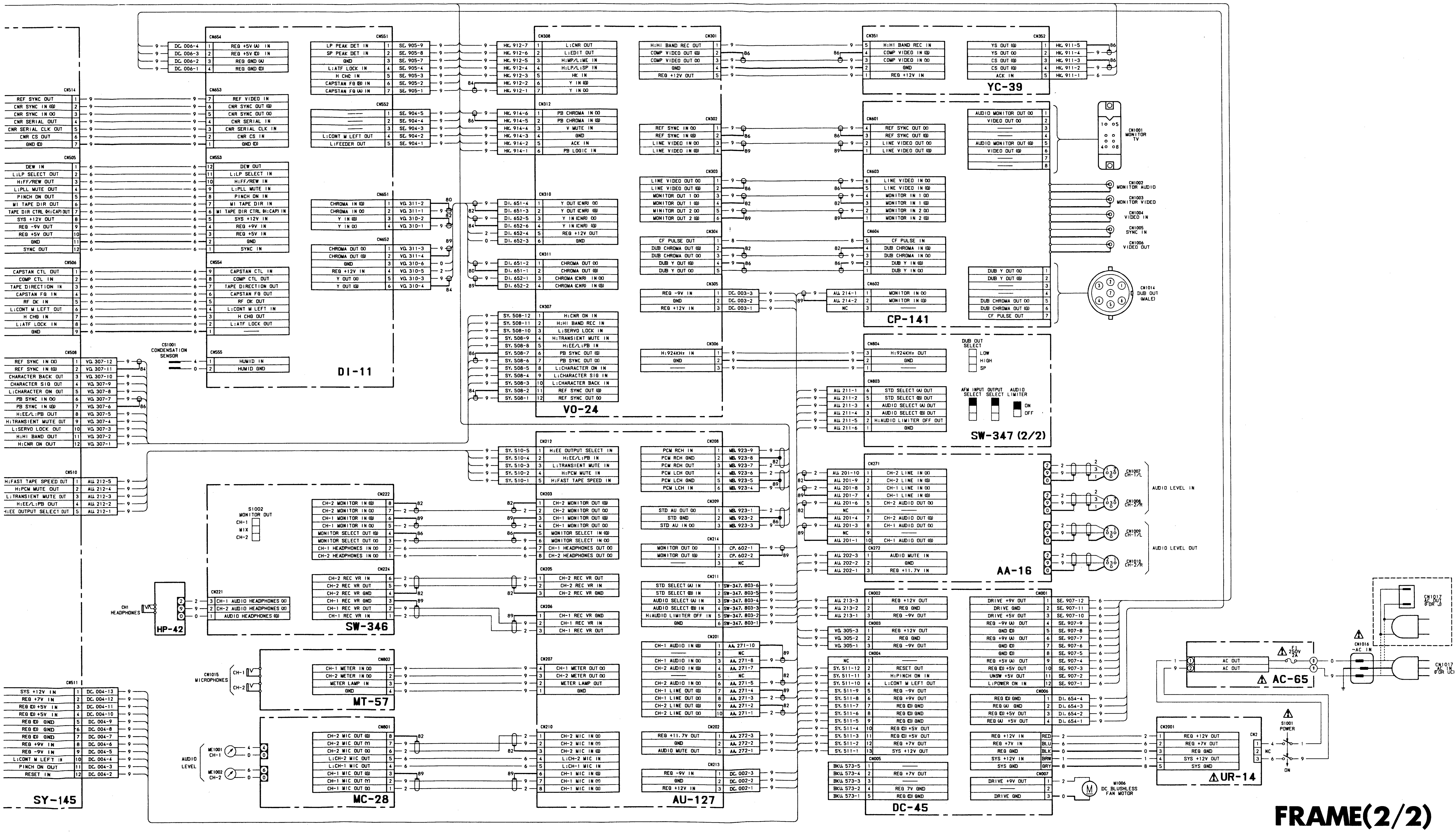
AC-65 —SOLDERING SIDE—
1-618-591-13(1)
EVO-9800

FRAME (2/2)


TO/FROM FRAME (1/2)
DP-101
DD-12
KY-162
RM-66
PTC-32
SEARCH DIAL
LP-52
SW-348
REMOTE
LOCAL
SW-347 (1/2)
ON
OFF
SY-145
HP-42
CH1 HEADPHONES
REMOTE 1 (9P)
WIRE JUMPER
CS1001 CONDENSATION SENSOR
CN1015 MICROPHONES
AUDIO LEVEL
TO BKU-703A
CN501
CN502
CN503
CN504
CN505
CN506
CN507
CN508
CN509
CN510
CN511
CN512
CN513
CN514
CN515
CN516
CN701
CN702
CN703
CN704
CN706
CN751
CN752
CN766
CN805
CN806
CN810
CN913
CN1001

注意1：⚠印のついた部品は安全性を維持するため
に重要な部品です。従って交換する時は必ず
指定の部品を使って下さい。

NOTE:
The ⚠-marked components are critical to safety.
Replace only with same components as specified.


SY-145
DI-11
VO-24
YC-39
CP-141
SW-347 (2/2)
AA-16
SW-346
HP-42
MT-57
MC-28
AU-127
DC-45
AC-65
UR-14
CN514
CN505
CN506
CN508
CN510
CN511
CN654
CN653
CN553
CN554
CN555
CN551
CN552
CN651
CN652
CN308
CN312
CN310
CN311
CN307
CN301
CN302
CN303
CN304
CN305
CN306
CN351
CN352
CN601
CN603
CN604
CN602
CN804
CN803
CN212
CN203
CN205
CN206
CN207
CN210
CN222
CN224
CN221
CN802
CN801
CN208
CN209
CN214
CN211
CN201
CN202
CN213
CN271
CN272
CN002
CN003
CN004
CN005
CN001
CN006
CN007
CN2001
CN2
CN1001 MONITOR TV
CN1002 MONITOR AUDIO
CN1003 MONITOR VIDEO
CN1004 VIDEO IN
CN1005 SYNC IN
CN1006 VIDEO OUT
CN1014 DUB OUT (MALE)
CN1007 CH-1/L
CN1008 CH-2/R
CN1009 CH-1/L
CN1010 CH-2/R
AUDIO LEVEL IN
AUDIO LEVEL OUT
CN1015 MICROPHONES
CN1016 ~AC IN
CN1017 AC OUT
CN1017 AC IN
CH1 HEADPHONES
CS1001 CONDENSATION SENSOR
S1002 MONITOR OUT
CH-1
MIX
CH-2
DUB OUT SELECT
LOW
HIGH
SP
AFM INPUT SELECT
OUTPUT SELECT
AUDIO LIMITER
ON
OFF
ME1001 CH-1
ME1002 CH-2
AUDIO LEVEL
F1 250V 2A
S1001 POWER
ON
M1006 DC BLUSHLESS FAN MOTOR
AC OUT
H
I
J
K
L
M
N
O
P
1
2
3
4
5

FRAME(2/2)

EVO-9800

SECTION 14
SPARE PARTS AND FIXTURE

14-1. PARTS INFORMATION

(1) The shaded and ⚠-marked components are critical to safety.
Replace only with same components as specified.

(2) Replacement Parts supplied from the Sony Parts Center will sometimes have a different shape from the original parts. This is due to **improved parts and/or engineering changes** or **standardization of genuine parts.**
This manual's exploded views and electrical spare parts list indicate the part numbers of **the standardized genuine parts at the present.** Regarding engineering part changes by the engineering department, refer to Sony service bulletins and service manual supplements.

(3) The parts marked with **s** in the SP column of the exploded views and electrical spare parts lists are normally stocked for replacement purposes. The parts marked with **o** in the SP column are not normally required for routine service work. Orders for parts marked with **o** will be processed, but allow for additional delivery time.

(4) Items with no part number and/or no description are not stocked because they are seldom required for routine service.

(5) (T) after a spring description is shown on the exploded views in order to indicate the number of spring turns required for the use.
.Example
Spring, tension (24T); This spring must be cut at its 24th turn for actual use.

(6) All capacitors are in micro farads unless otherwise specified.
All inductors are in micro henries unless otherwise specified.
All resistors are in ohms.

14-2. EXPLODED VIEWS

- Exploded views are composed of the following blocks.

(1) Reel Table Block
    Tension Regulator Arm
    T Reel Table
    S Reel Table
    S Soft Table

(2) Threading Ring and Tape Path Blocks
    Tape Guides
    Threading Motor
    Threading Ring
    T Main Brake
    S Main Brake
    Capstan Motor

(3) Head Drum and Threading Control Blocks
    Head Drum
    L Slider Assembly
    Tape Guides
    Pinch Press Lever
    L-switch Assembly

(4) Mechanism Control Block
    M-switch Assembly
    T.S Brake
    REW Brake
    S Hard Brake
    Control Motor

(5) Cassette-up Compartment Block (1)
    FL Motor (Cassette Loading)
    Tape TOP/END sensor

(6) Cassette-up Compartment Block (2)

(7) Printed Circuit Boads Block (Mechanical Deck)
    Printed Circuit Boards
    Reel Motor

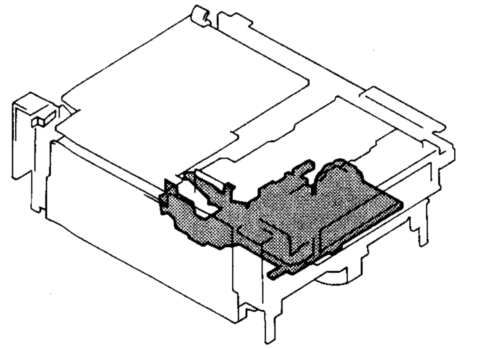
(8) Function Control Chassis Block
    Function Control Panel
    Search Dial

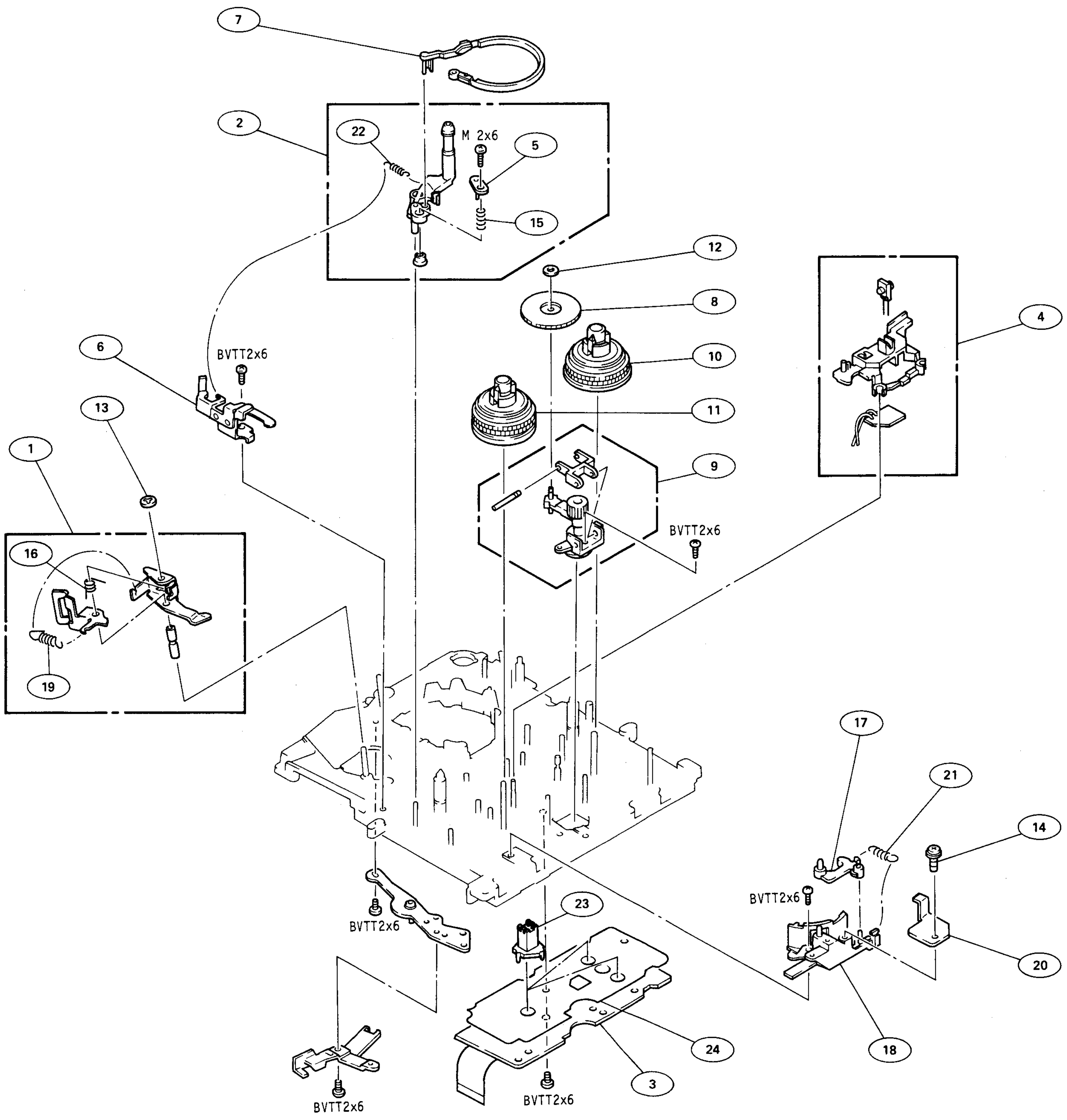
(9) Connector Panel Block
    Switching Regulator (UR-14)

(10) Printed Circuit Boards
    Power Switch

(11) Ornamental Panel Block
    Top Plate
    Front Panel
    Key Panel
    Side Plate
    Bottom Plate

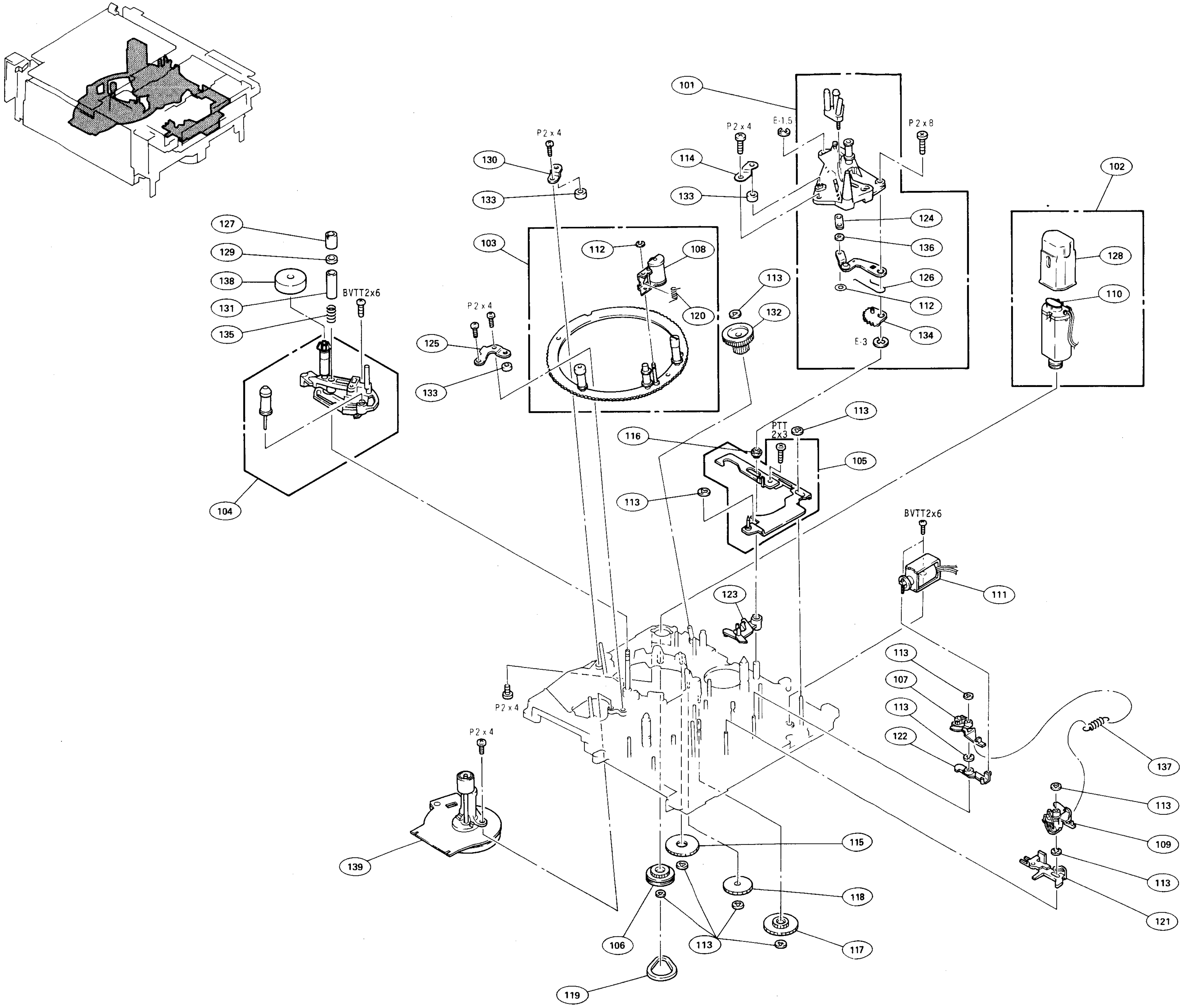
Reel Table Block




7
2
22
M 2x6
5
15
12
8
6
BVTT2x6
10
4
13
11
1
9
BVTT2x6
16
19
17
21
14
BVTT2x6
23
BVTT2x6
20
24
18
3
BVTT2x6
BVTT2x6

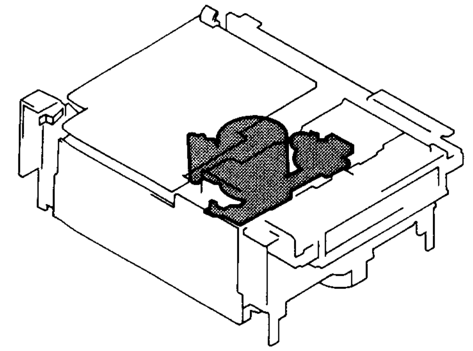
No.	Part No.	SP	Description
1	A-7040-008-A	s	ARM ASSY, PINCH PRESS
2	A-7040-071-A	s	ARM ASSY, TENSION REGULATOR
3	A-7061-818-A	o	MOUNTED CIRCUIT BOARD, RS-31
4	A-7070-024-A	o	MOUNTED CIRCUIT BOARD, LD-1
5	X-3686-523-1	o	PLATE ASSY, TENSION REGULATOR
6	X-3686-525-1	o	HOOK ASSY, SPRING
7	X-3686-531-1	s	BAND ASSY, TENSION REGULATOR
8	X-3686-763-1	s	GEAR (B) ASSY, DRIVING
9	X-3711-963-1	s	DRIVING COMPLETE ASSY
10	X-3711-998-1	s	TABLE ASSY, REEL, TAKE-UP
11	X-3713-427-1	s	TABLE ASSY, REEL, SUPPLY
12	3-315-384-31	s	WASHER, STOPPER
13	3-669-465-00	s	WASHER (1.5), STOPPER
14	3-669-480-11	s	+ PTPWH 2
15	3-669-666-00	s	SPRING, COMPRESSION
16	3-686-568-01	s	SPRING, TORSION
17	3-686-637-01	o	BRAKE (S), SOFT
18	3-686-760-01	o	GUIDE, BAND
19	3-686-885-01	s	SPRING, TENSION
20	3-686-991-01	o	STOPPER, REEL TABLE
21	3-696-082-01	s	SPRING, TENSION
22	3-699-519-01	s	SPRING, TENSION
23	3-712-410-01	s	HOLDER, RS
24	3-712-411-01	s	INSULATOR, RS

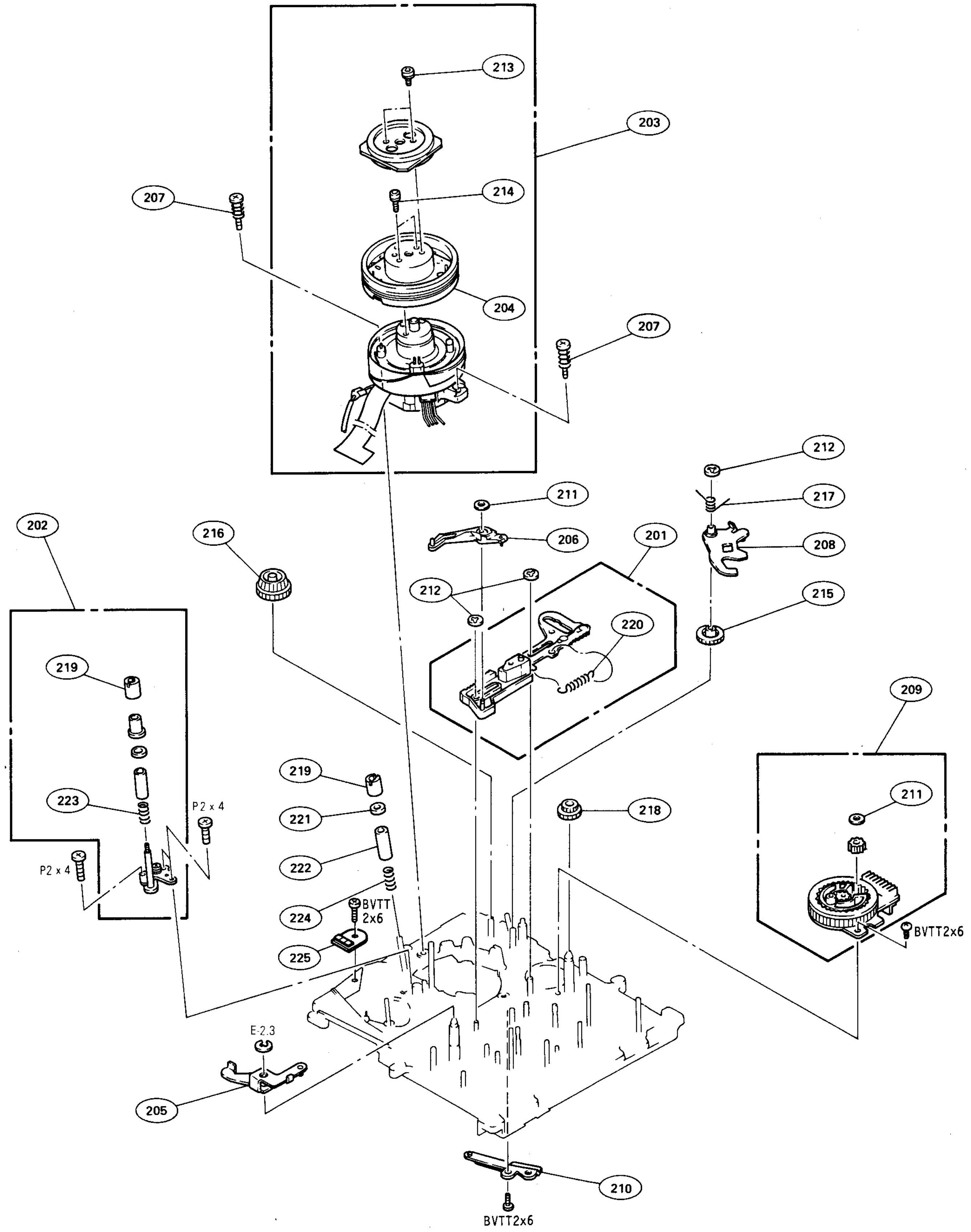
Threading Ring and Tape Path Blocks


101
P2x4
E-1.5
P2x8
102
130
114
133
133
124
136
128
127
129
103
112
108
113
126
110
138
BVTT2x6
131
P2x4
120
132
112
135
134
125
E-3
133
PTT
2x3
113
116
105
104
113
BVTT2x6
123
111
113
P2x4
107
113
P2x4
122
137
113
109
139
115
113
118
121
106
113
117
119

No.	Part No.	SP	Description
101	A-7040-001-A	s	GUIDE BLOCK ASSY, SLANT
102	A-7040-065-A	s	MOTOR ASSY, L (THREADING)
103	A-7040-123-A	s	RING ASSY, THREADING
104	A-7040-169-D	s	GUIDE (P) ASSY, ENTRANCE
105	A-7040-199-A	s	SLIDER (M) BLOCK ASSY, LOCK
106	X-3686-514-1	s	GEAR ASSY, NO.1
107	X-3686-574-1	s	BRAKE ASSY, MAIN, TAKE-UP
108	X-3686-648-1	s	ARM ASSY, PINCH ROLLER
109	X-3713-429-1	s	BRAKE ASSY, MAIN, S
110	1-161-057-00	s	CAP, CERAMIC 0,033MF X
111	⚠. 1-454-377-31	s	SOLENOID, PLUNGER
112	3-315-384-31	s	WASHER, STOPPER
113	3-669-465-00	s	WASHER (1,5), STOPPER
114	3-686-503-01	o	RETAINER, ROLLER
115	3-686-508-01	s	GEAR, NO.2
116	3-686-537-01	s	RETAINER, LOCK SLIDER
117	3-686-544-01	s	GEAR, NO.4
118	3-686-545-01	s	GEAR, NO.3
119	3-686-546-01	s	BELT, L- MOTOR
120	3-686-566-01	s	SPRING, TORSION
121	3-686-629-01	o	SLIDER, SELECTION, UPPER & LOWER
122	3-686-635-01	o	ARM, P
123	3-686-636-04	o	ARM, T,S RELEASE
124	3-686-663-01	s	WASHER, STOPPER, 2 GANG
125	3-686-675-01	o	STOPPER, RING
126	3-686-701-01	s	SPRING
127	3-686-724-01	s	NUT, GUIDE
128	3-686-757-01	o	CAP, SHIELD, L MOTOR
129	3-686-894-01	o	FLANGE, #3 #4 GUIDE
130	3-686-911-01	o	PLATE, TOP, ROLLER
131	3-686-912-01	s	GUIDE, #3 #4
132	3-697-518-01	s	GEAR, NO.10
133	3-697-538-01	s	ROLLER, RING
134	3-699-509-01	s	GEAR, SECTOR
135	3-699-609-01	s	SPRING, COMPRESSION
136	3-701-436-21	s	WASHER, POLY 1,6MM DIA,, 0,5T
137	3-713-560-01	s	SPRING, TENSION
138	3-722-153-01	s	FLYWHEEL
139	8-835-364-01	s	MOTOR, DC (BHF-2802B)

Head Drum and Threading Control Blocks

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203
214
207
204
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212
211
217
206
201
208
202
216
212
215
220
219
209
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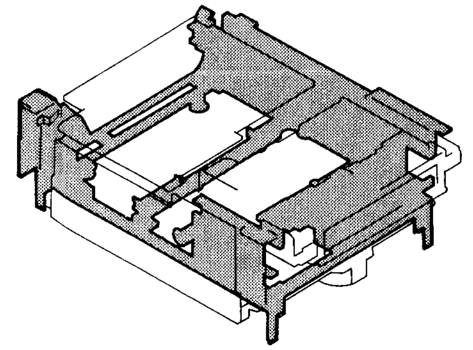
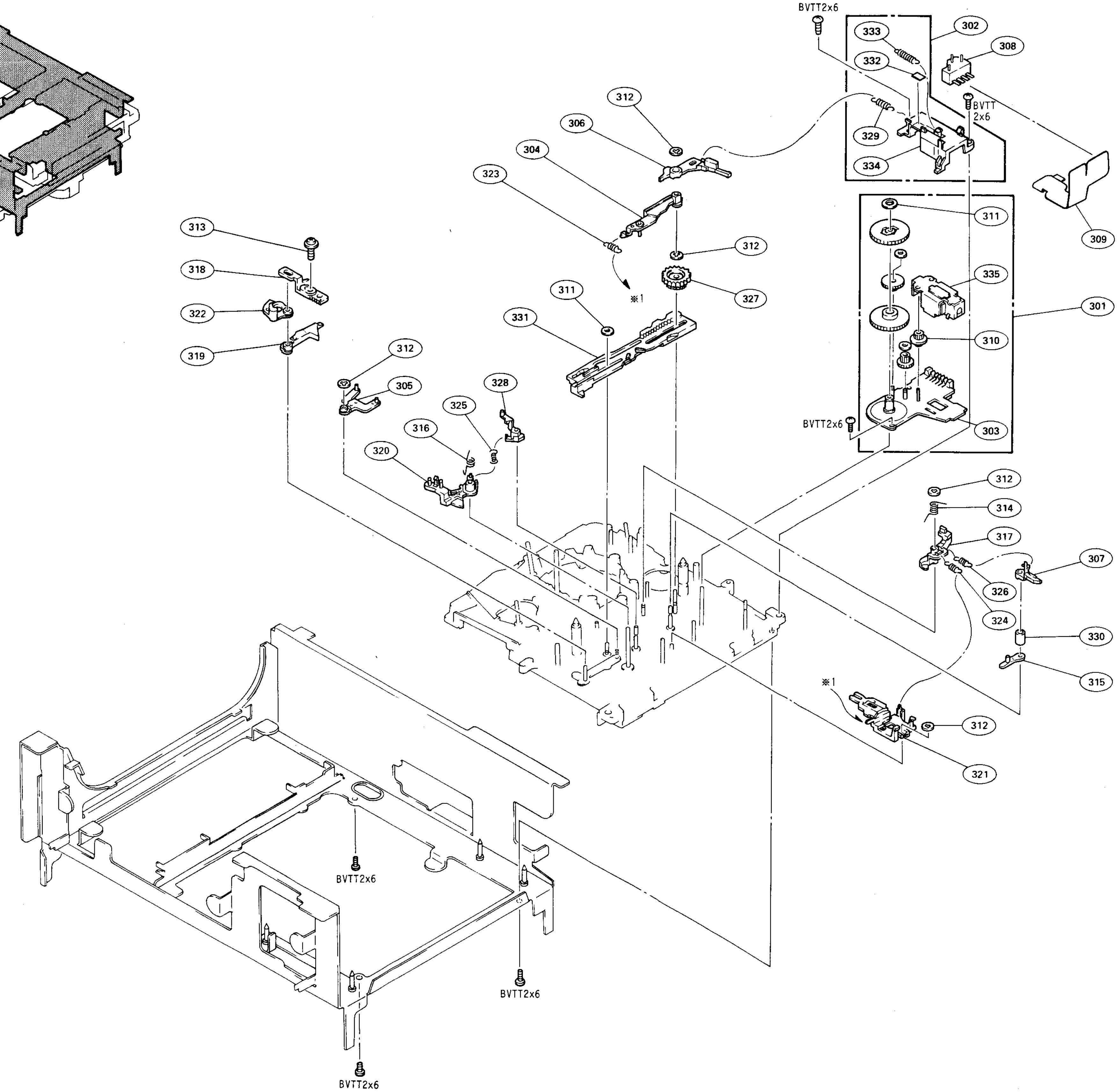
223
P2 x 4
221
218
211
222
224
BVTT 2x6
225
P2 x 4
BVTT2x6
E-2.3
205
210
BVTT2x6

No.	Part No.	SP	Description
201	A-7040-010-A	o	SLIDER ASSY, L
202	A-7040-058-A	s	GUIDE BLOCK COMPLETE ASSY, #5
203	A-7048-417-A	s	DRUM ASSY (DGH-35B-R)
204	A-7049-351-A	s	DRUM ASSY, ROTARY (UPPER) (DGR-35B-R)
205	X-3686-509-1	o	LEVER ASSY, PINCH PRESS
206	X-3686-518-3	o	ARM ASSY
207	X-3686-569-1	s	SCREW ASSY, FITTING
208	X-3686-579-1	s	CHANGE ASSY, DRIVE
209	X-3712-403-1	s	L-SW ASSY
210	1-535-535-11	s	TERMINAL, SHAFT GROUND
211	3-315-384-31	s	WASHER, STOPPER
212	3-669-465-00	s	WASHER (1.5), STOPPER
213	3-686-422-01	s	WASHER (2X2.7), BOLT, HOLE
214	3-686-493-01	s	SCREW +P 2X5 TYPE 1
215	3-686-535-01	s	GEAR, NO.8
216	3-686-539-01	s	GEAR, NO.9
217	3-686-540-01	s	SPRING, TORSION
218	3-686-702-01	s	GEAR, DRIVING, GUIDE, SLANT
219	3-686-724-01	s	NUT, GUIDE
220	3-686-886-01	s	SPRING, TENSION
221	3-686-894-01	o	FLANGE, #3 #4 GUIDE
222	3-686-912-01	s	GUIDE, #3 #4
223	3-699-514-01	s	SPRING, COMPRESSION
224	3-699-609-01	s	SPRING, COMPRESSION
225	1-806-682-51	s	SENSOR, DEW CONDENSATION

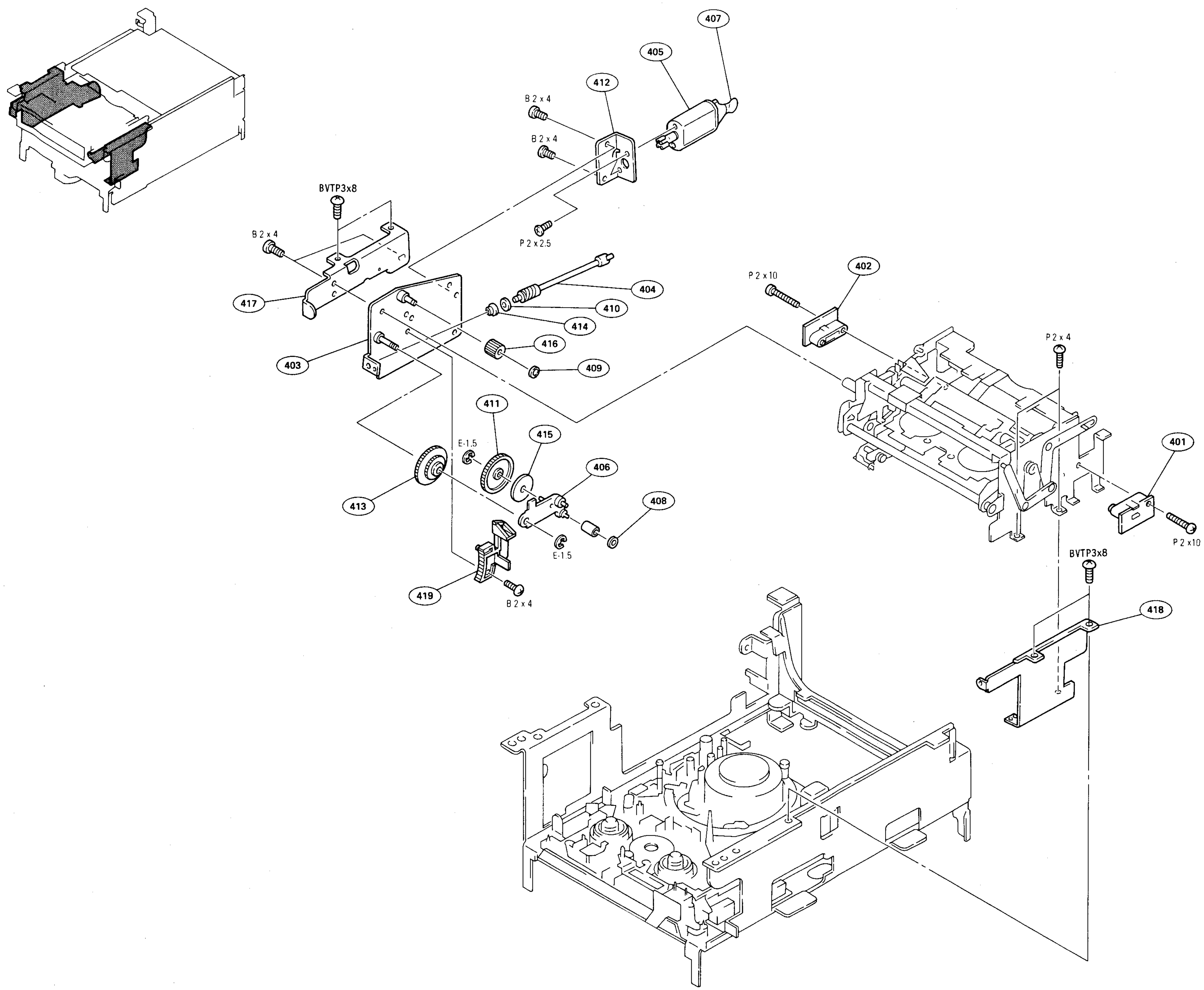
Mechanism Control Block




BVTT2x6
333
302
332
308
BVTT 2x6
312
306
329
334
304
323
311
309
313
312
335
318
311
327
301
※1
322
331
319
310
312
305
328
BVTT2x6
303
325
316
320
312
314
317
307
326
324
330
315
※1
312
321
BVTT2x6
BVTT2x6
BVTT2x6

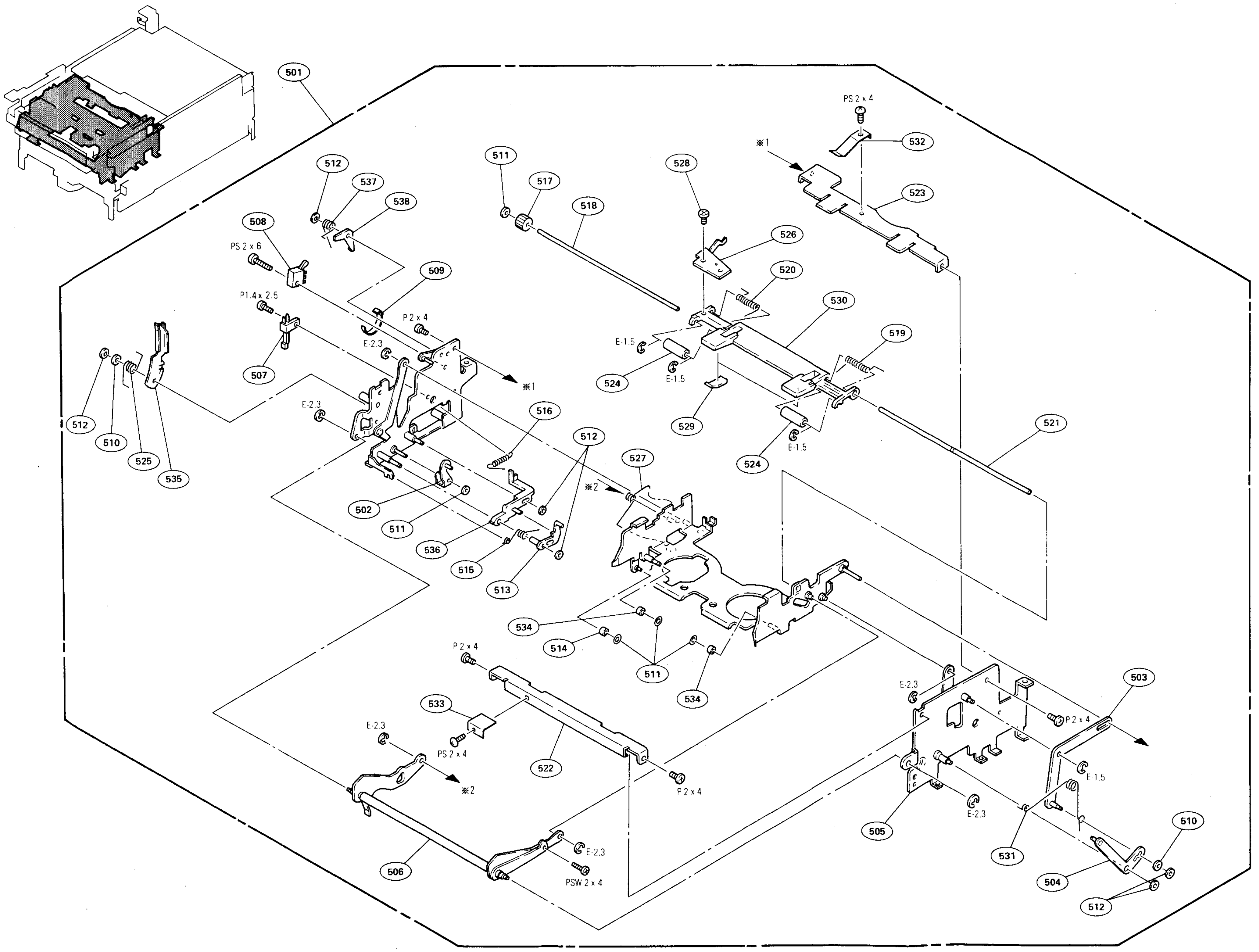
No.	Part No.	SP	Description
301	A-7040-159-A	s	M-SW ASSY
302	A-7040-198-A	s	COVER (M) ASSY, C MOTOR
303	A-7090-029-A	s	MOUNTED CIRCUIT BOARD, MS-4
304	X-3686-528-4	o	ARM ASSY, B RELEASE
305	X-3686-530-1	o	ARM (A) ASSY, SELECTION
306	X-3711-987-2	s	BRAKE ASSY, T.S
307	X-3711-993-1	s	BRAKE ASSY, REW
308	1-571-680-21	s	SWITCH, PUSH (3 KEY)
309	1-630-923-11	o	FP-206 FLEXIBLE BOARD
310	3-308-502-00	s	WHEEL, WORM
311	3-315-384-31	s	WASHER, STOPPER
312	3-669-465-00	s	WASHER (1.5), STOPPER
313	3-686-528-01	s	SCREW (2X6), +
314	3-686-579-01	s	SPRING
315	3-686-580-01	o	ARM, SET UP
316	3-686-603-04	s	SPRING
317	3-686-634-01	o	ARM, RL
318	3-686-642-01	o	PLATE, ADJSUTMENT, BAND
319	3-686-643-01	o	ARM, MODE
320	3-686-644-01	o	ARM, BAND
321	3-686-656-01	o	SLIDER, B RELEASE
322	3-686-755-01	o	DISK, EJECT
323	3-686-903-01	s	SPRING, TENSION
324	3-686-904-01	s	SPRING, TENSION
325	3-686-905-02	s	SPRING, TENSION
326	3-686-906-01	s	SPRING, TENSION
327	3-686-909-01	s	GEAR, MODE OUTPUT
328	3-686-996-01	s	BRAKE (S), HARD
329	3-714-035-01	s	SPRING, TENSION
330	3-716-933-01	s	SPACER, REW BRAKE
331	3-716-935-01	s	SLIDER, M
332	3-716-963-01	s	SHOE, C MOTOR COVER
333	3-722-110-01	s	SPRING, TENSION
334	3-739-107-01	s	COVER (M), C MOTOR
335	8-835-138-01	s	MOTOR, DC (DNR-5301B) (CONTROL)

Cassette Up Compartment Block (1)


407
405
412
B 2 x 4
B 2 x 4
BVTP3x8
B 2 x 4
P 2 x 2.5
404
417
410
414
403
416
409
P 2 x 10
402
P 2 x 4
411
E-1.5
415
406
408
413
401
E-1.5
P 2 x10
BVTP3x8
419
B 2 x 4
418

No.	Part No.	SP	Description
401	A-7070-627-A	o	MOUNTED CIRCUIT BOARD, TS-74 (RIGHT)
402	A-7070-628-A	o	MOUNTED CIRCUIT BOARD, TS-74 (LEFT)
403	X-3711-934-1	o	PLATE SUB ASSY, BLOCK
404	X-3711-935-3	s	SHAFT ASSY, WORM
405	X-3711-936-1	s	MOTOR ASSY, FL (CASSETTE LOADING)
406	X-3714-193-1	s	LEVER ASSY (B), GEAR
407	1-161-057-00	s	CAP, CERAMIC 0.033MF X
408	3-315-414-31	s	WASHER
409	3-669-465-00	s	WASHER (1.5), STOPPER
410	3-701-437-11	s	WASHER, POLY 2MM DIA., 0.25T
411	3-713-430-01	s	GEAR (B)
412	3-713-431-01	o	BRACKET, MOTOR
413	3-713-433-01	s	GEAR (A)
414	3-713-439-01	s	BEARING
415	3-713-441-01	o	SPRING, LEAF
416	3-713-452-01	s	GEAR (C)
417	3-724-140-01	o	BRACKET (LEFT)
418	3-724-141-01	o	BRACKET (RIGHT)
419	3-724-913-02	s	RACK

Cassette Up Compartment Block (2)


501
512
537
538
508
PS 2 x 6
509
P 2 x 4
P1.4 x 2.5
E-2.3
507
E-2.3
※1
511
517
518
528
※1
PS 2 x 4
532
523
526
520
530
519
E-1.5
524
E-1.5
529
524
E-1.5
521
516
512
527
※2
502
511
536
515
513
512
510
525
535
534
514
511
534
P 2 x 4
533
E-2.3
PS 2 x 4
※2
522
P 2 x 4
506
E-2.3
PSW 2 x 4
E-2.3
503
P 2 x 4
E-1.5
E-2.3
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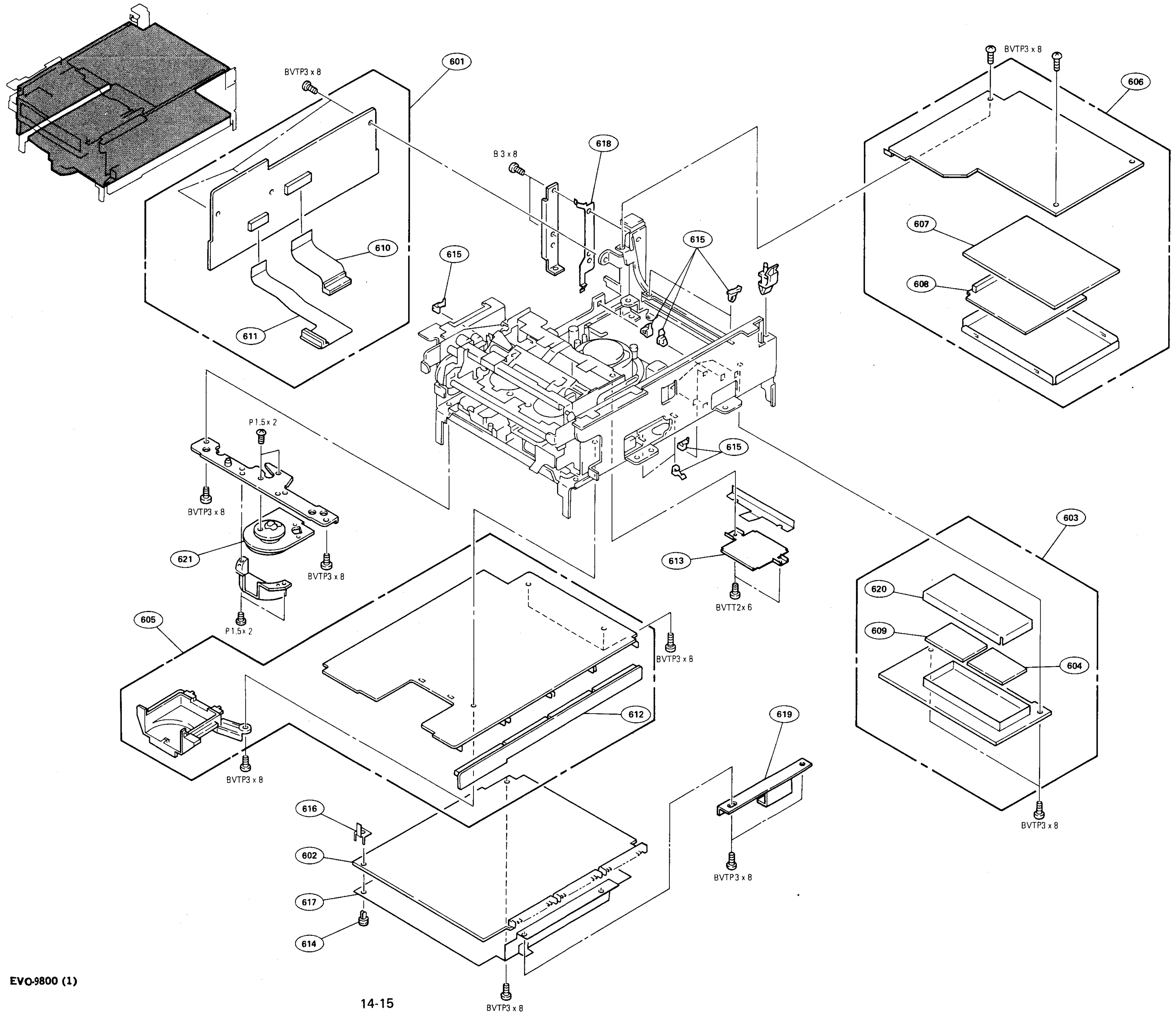
No.	Part No.	SP	Description
501	A-7090-645-A	s	CASSETTE COMPARTMENT BLOCK ASSY
502	X-3686-541-1	o	CLAW ASSY, LOCK
503	X-3711-930-1	s	LEVER ASSY, HOLDER
504	X-3711-931-4	s	LEVER ASSY, DOOR
505	X-3711-932-1	o	PLATE (R) ASSY, SIDE
506	X-3711-937-1	o	JOINT ASSY
507	1-553-226-00	s	SWITCH, LEAF (CASSETTE LOCK)
508	1-570-407-11	s	SWITCH, SLIDE (CASSETTE LOADING)
509	3-337-402-01	o	BAND, BINDING
510	3-533-073-01	s	WASHER
511	3-578-265-11	s	WASHER, STOPPER
512	3-669-465-00	s	WASHER (1.5), STOPPER
513	3-686-692-01	s	PREVENTION, SLIDER
514	3-686-693-01	o	ROLLER, LOCK
515	3-686-694-01	s	SPRING, TORTION
516	3-696-047-01	s	SPRING, TENSION
517	3-713-429-01	s	GEAR (D)
518	3-713-440-01	o	SHAFT, ROLLER
519	3-713-442-01	s	SPRING (RIGHT)
520	3-713-445-01	s	SPRING (LEFT)
521	3-713-457-01	o	SHAFT, JOINT
522	3-713-458-01	o	REINFORCEMENT
523	3-713-462-01	o	STOPPER, HOLDER
524	3-713-466-01	s	ROLLER
525	3-713-488-01	s	SPRING (2), TORSION
526	3-713-492-01	s	PLATE, FUNCTION, LEVER
527	3-713-620-01	s	SPRING (1), TORSION
528	3-713-622-01	s	SCREW (M1.3X4), TAPPING, 0
529	3-713-625-01	s	SHOE, BRAKE
530	3-713-626-01	s	COVER, MULTI
531	3-713-628-01	s	SPRING, TORTION
532	3-713-658-01	s	SPRING
533	3-716-921-01	s	SPRING, LEAF
534	3-719-590-01	s	ROLLER, ASSIST
535	3-721-125-01	s	LEVER, LOCK
536	3-721-136-01	s	SLIDER, LOCK
537	3-721-163-01	s	SPRING
538	3-721-166-01	s	LEVER, SWITCH

Printed Circuit Boards Block (Mechanical Deck)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611
B 3 x 8
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BVTP3 x 8
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608
P 1.5 x 2
BVTP3 x 8
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BVTP3 x 8
P 1.5 x 2
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BVTT2 x 6
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604
BVTP3 x 8
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BVTP3 x 8
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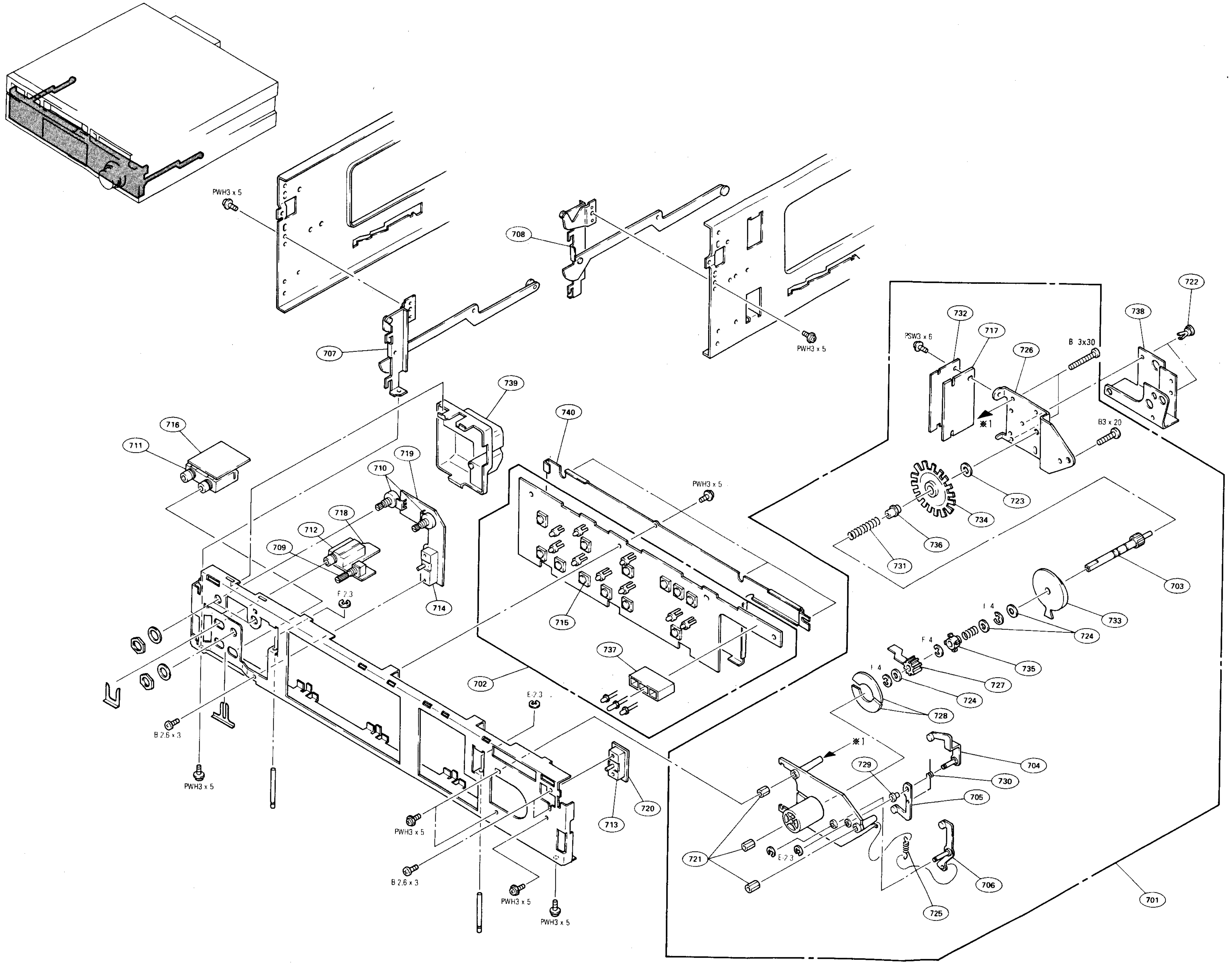
619
BVTP3 x 8
BVTP3 x 8
BVTP3 x 8

No.	Part No.	SP	Description
601	A-7061-819-A	o	MOUNTED CIRCUIT BOARD, MD-23
602	A-7061-820-A	o	MOUNTED CIRCUIT BOARD, HK-4
603	A-7061-821-A	o	MOUNTED CIRCUIT BOARD, FR-40
604	A-7061-822-A	o	MOUNTED CIRCUIT BOARD, RP-73 (SP)
605	A-7061-823-A	o	MOUNTED CIRCUIT BOARD, SE-10
606	A-7061-824-A	o	MOUNTED CIRCUIT BOARD, MB-19
607	A-7061-825-A	o	MOUNTED CIRCUIT BOARD, PD-19
608	A-7061-826-A	s	MOUNTED CIRCUIT BOARD, PA-27
609	A-7061-827-A	o	MOUNTED CIRCUIT BOARD, RP-73 (LP)
610	A-7070-624-A	o	FP-84 FLEXIBLE BOARD
611	A-7070-625-A	o	FP-122 FLEXIBLE BOARD
612	A-7070-955-A	o	MOUNTED CIRCUIT BOARD, IG-4
613	X-3691-922-1	o	COVER ASSY, FLEXIBLE
614	3-531-576-01	s	RIVET
615	3-671-150-11	o	CLAMP
616	3-724-107-01	o	RETAINER, PC BOARD
617	3-724-175-01	o	PLATE, SHIELD, CORE
618	3-724-199-01	o	PLATE, SUPPORT, MB
619	3-738-954-01	o	STOPPER, HK
620	3-739-102-01	o	LID (H), UPPER, FR SHIELD CASE
621	8-835-304-11	s	MOTOR, DC (U-11B) (REEL MOTOR)

Function Control Chassis Block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708
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PWH3 x 5
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PSW3 x 6
726
B 3x30
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B2.6 x 3
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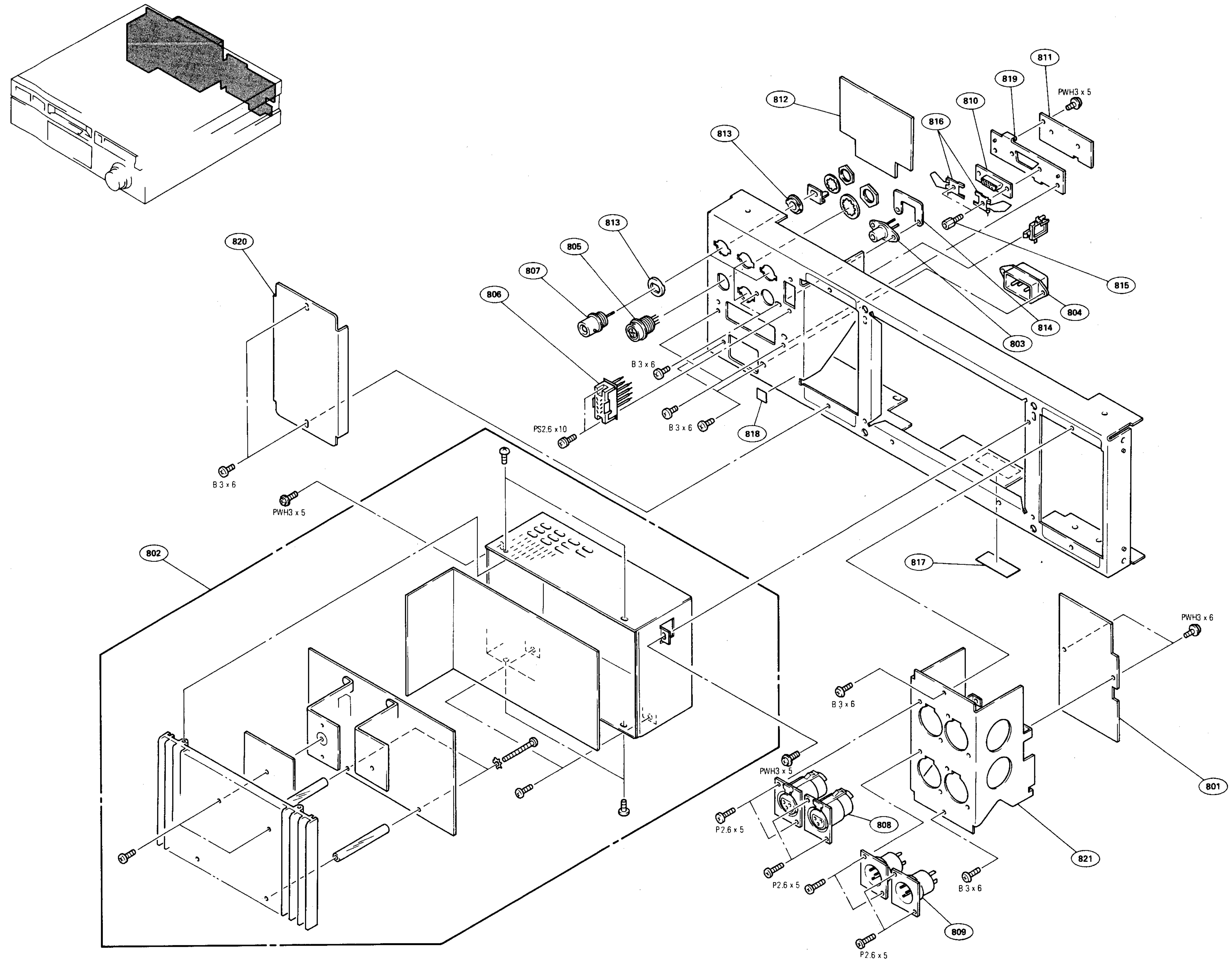
PWH3 x 5
B2.6 x 3
PWH3 x 5
PWH3 x 5

No.	Part No.	SP	Description
701	A-6734-238-C	s	DIAL BLOCK ASSY, SERCH
702	A-7061-779-A	o	MOUNTED CIRCUIT BOARD, KY-162
703	X-3717-226-1	o	SHAFT SUB ASSY, MAIN
704	X-3717-227-1	o	ARM (RIGHT) ASSY, S10
705	X-3717-228-1	o	ARM (LEFT) ASSY, S10
706	X-3717-229-1	o	ARM ASSY, RETURN
707	X-3738-903-1	o	HINGE (LEFT) ASSY
708	X-3738-904-1	o	HINGE (RIGHT) ASSY
709	1-237-703-11	s	RES, VAR, CARBON 2K/2K
710	1-238-483-11	s	RES, VAR, CARBON 5K
711	1-507-797-21	s	JACK, LARGE TYPE 2P
712	1-507-854-00	s	JACK, LARGE TYPE
713	1-516-961-00	s	SWITCH, LEVER SLIDE
714	1-516-963-00	s	SWITCH, LEVER SLIDE
715	1-552-539-00	s	SWITCH, KEY BOARD
716	1-622-222-11	o	PRINTED CIRCUIT BOARD, MC-28
717	1-622-638-12	o	PRINTED CIRCUIT BOARD, PTC-32
718	1-629-477-12	o	PRINTED CIRCUIT BOARD, HP-42
719	1-631-793-12	o	PRINTED CIRCUIT BOARD, SW-346
720	1-631-795-11	o	PRINTED CIRCUIT BOARD, SW-348
721	2-280-622-11	o	SUPPORT (M3), HEXAGON
722	3-531-576-01	s	RIVET
723	3-662-048-00	s	WASHER, BRACKET
724	3-701-443-21	s	WASHER, POLY 5MM DIA., 0.50T
725	3-701-788-XX	s	SPRING, TENSION (15T)
726	3-717-315-01	o	PLATE, BOTTOM, SD
727	3-717-316-03	o	GUIDE. LOCK IN
728	3-717-317-01	o	PLATE, CLUTCH
729	3-717-318-01	o	BEARING, S10
730	3-717-319-01	o	SPRING, TORSION
731	3-717-320-01	o	SPRING, COMPRESSION
732	3-717-321-01	o	PROTECTOR, PTC
733	3-717-417-01	o	CAM
734	3-717-418-01	o	PLATE
735	3-717-546-02	o	GUIDE, LOCK OUT
736	3-717-553-01	o	BEARING, SD
737	3-718-657-01	o	HOLDER, LED
738	3-718-771-01	o	COVER (U), SD
739	3-738-914-01	o	PROTECTOR, MH
740	3-738-933-01	o	PROTECTOR, KY

Connector Panel Block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PWH3 x 5
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PWH3 x 5
P2.6 x 5
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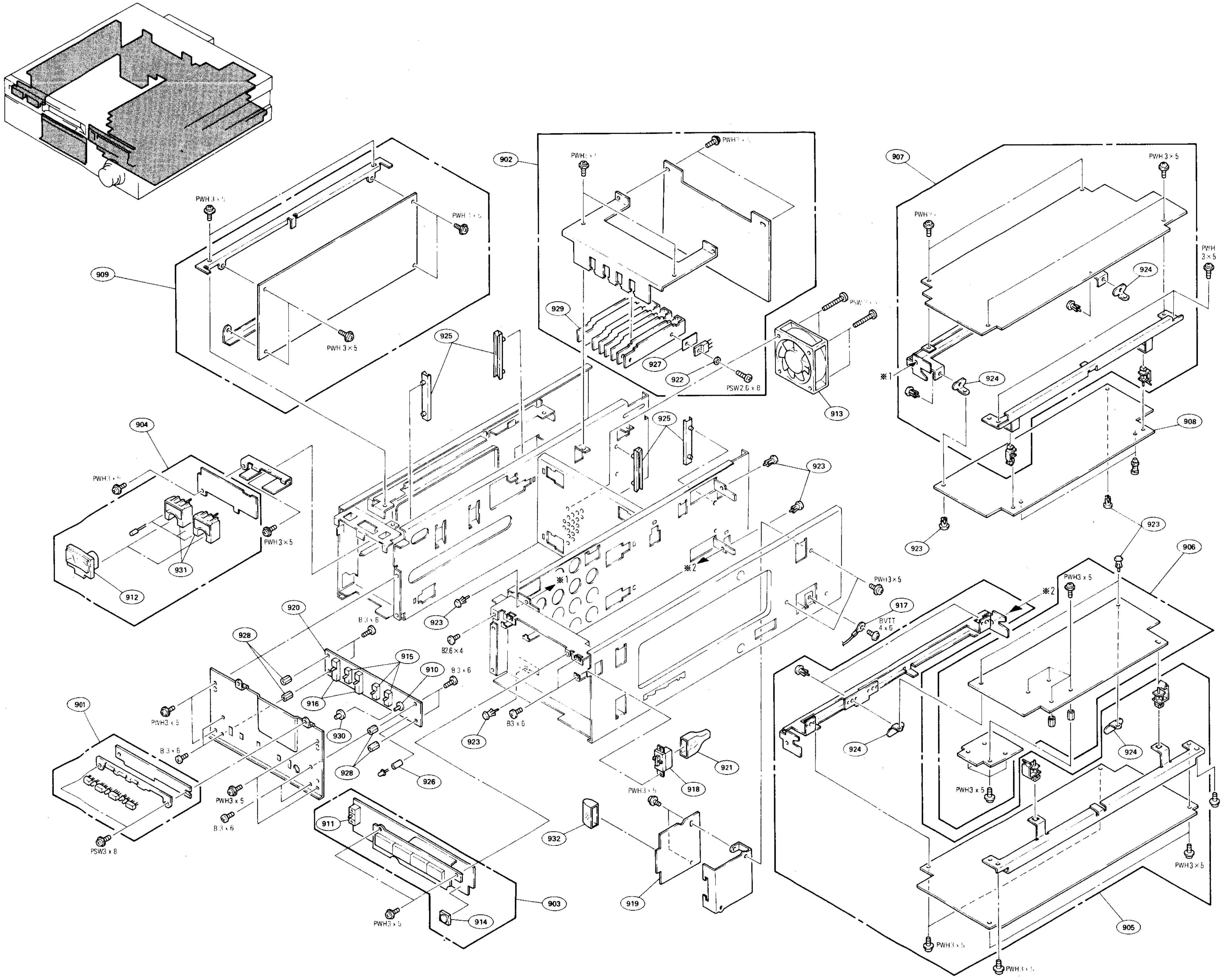
P2.6 x 5
B 3 x 6
809
P2.6 x 5

No.	Part No.	SP	Description
801	A-6713-363-A	o	MOUNTED CIRCUIT BOARD, AA-16
802	⚠.1-413-248-11	s	SWITCHING REGULATOR (UR-14)
803	1-507-467-00	s	1P PIN JACK
804	⚠.1-560-222-11	s	INLET 3P
805	1-561-045-21	s	CONNECTOR, (R-F)
806	1-561-577-21	s	CONNECTOR (DIP TYPE) 8P
807	1-562-227-21	o	RECEPTACLE, BNC
808	1-563-029-21	s	CONNECTOR (RECEPTACLE) 3P
809	1-563-030-21	s	CONNECTOR (RECEPTACLE) 3P
810	1-563-890-21	s	SOCKET, D-SUB CONNECTOR 9P
811	1-629-473-11	o	PRINTED CIRCUIT BOARD, RM-66
812	1-631-807-11	o	PRINTED CIRCUIT BOARD, CP-141
813	3-654-545-00	s	SPACER, BNC
814	3-661-147-00	o	NUT, PLATE
815	3-668-459-11	o	SCREW, CONNECTOR
816	3-668-460-00	o	SPRING
817	3-703-845-01	o	LABEL (N) (U/C), MAIN CAUTION
818	3-703-848-01	o	LABEL (N), SUB CAUTION
819	3-733-601-01	o	BRACKET, 9P
820	3-733-627-01	o	COVER, IF
821	3-733-641-01	o	BRACKET, XLR

Printed Circuit Boards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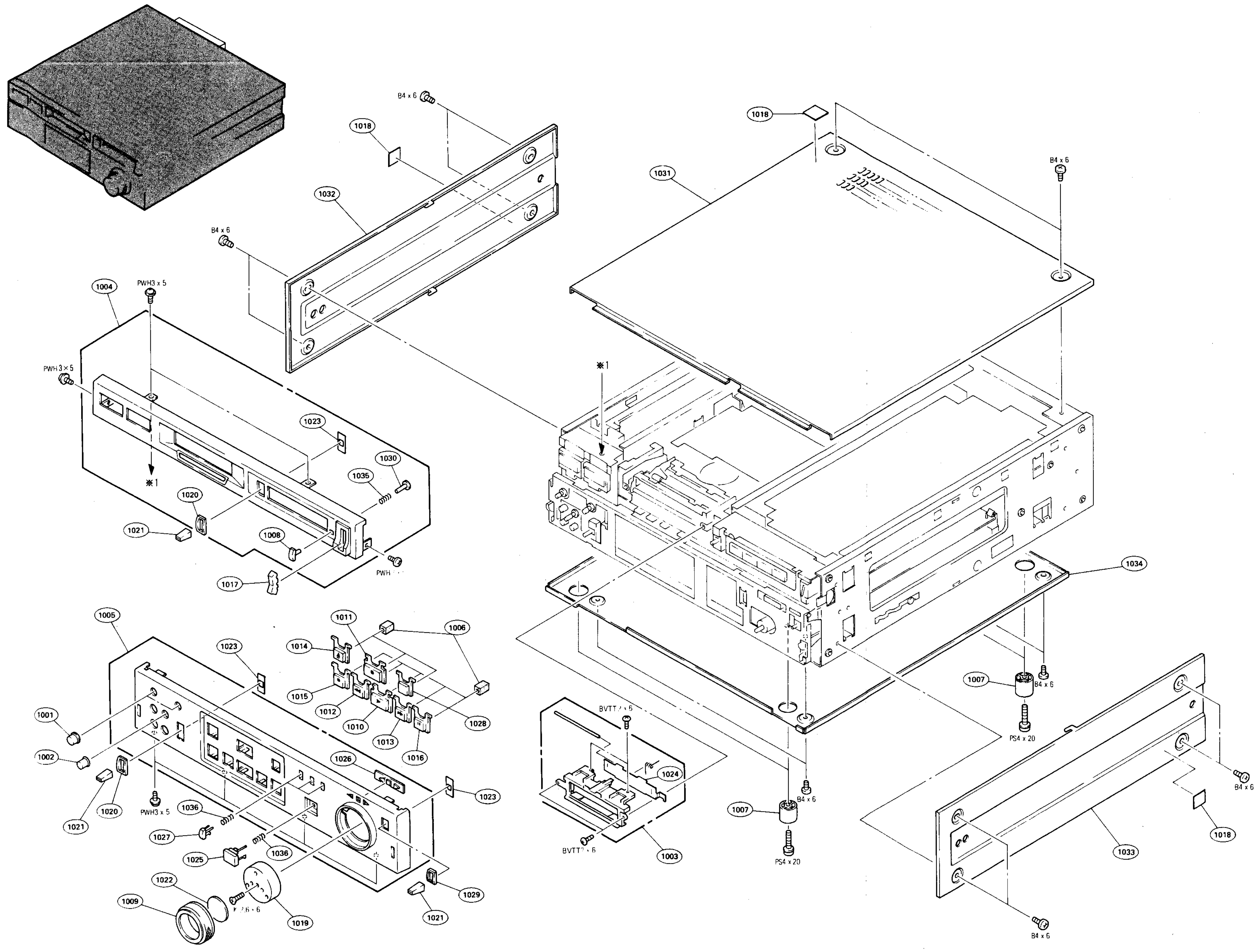
PWH3×5
PWH3×5
PWH3×5
B3×6
B3×6
PSW3×8
PSW2.6×8
B2.6×4
BVTT
4×6
※1
※2

No.	Part No.	SP	Description
901	A-7061-770-A	o	MOUNTED CIRCUIT BOARD, LP-52
902	A-7061-771-A	o	MOUNTED CIRCUIT BOARD, DC-45
903	A-7061-772-A	o	MOUNTED CIRCUIT BOARD, DD-12
904	A-7061-773-A	o	MOUNTED CIRCUIT BOARD, MT-57
905	A-7061-774-A	o	MOUNTED CIRCUIT BOARD, SY-145
906	A-7061-775-A	o	MOUNTED CIRCUIT BOARD, DI-11
907	A-7061-776-A	o	MOUNTED CIRCUIT BOARD, VO-24
908	A-7061-777-A	o	MOUNTED CIRCUIT BOARD, YC-39
909	A-7061-778-A	o	MOUNTED CIRCUIT BOARD, AU-127
910	1-230-122-00	s	RES, VAR, CARBON 100K
911	1-516-995-00	s	SWITCH, LEVER SLIDE
912	1-520-506-11	s	METER, AUDIO LEVEL
913	1-541-360-21	s	MOTOR, DC BLUSHLESS FAN
914	1-552-539-00	s	SWITCH, KEY BOARD
915	1-554-481-00	s	SWITCH, SLIDE
916	1-571-908-11	s	SWITCH, SLIDE
917	1-555-724-00	o	WIRE, GROUND
918	⚠. 1-570-117-41	s	POWER, SW
919	1-618-591-11	o	PRINTED CIRCUIT BOARD, AC-65
920	1-631-794-11	o	PRINTED CIRCUIT BOARD, SW-347
921	2-269-962-00	o	COVER, SW
922	2-371-561-00	s	BUSHING (P), INSULATING
923	3-646-090-00	s	RIVET, NYLON
924	3-657-153-00	o	HINGE
925	3-673-676-01	o	RAIL, GUIDE, CHASSIS
926	3-695-988-01	o	HOLDER (RE), LED
927	3-703-037-00	s	INSULATOR, TO-220
928	3-718-661-01	o	SUPPORT, TC
929	3-718-718-02	o	HEAT SINK (TA)
930	3-738-903-01	s	KNOB, ADJUST
931	3-738-923-01	o	HOLDER, LED
932	4-601-472-00	o	COVER, FUSE

Ornamental Panel Block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B4 x 6
1032
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1004
PWH3 x 5
PWH3×5
✻1
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1030
1035
1020
1021
1008
1017
PWH
1005
1011
1006
1014
1015
1012
1010
1013
1016
1028
1001
1002
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1036
1027
1025
1022
1009
1019
1029
1003
1024
BVTT
1007
PS4 x 20
1034
1033

No.	Part No.	SP	Description
1001	X-3661-073-0	s	KNOB ASSY, CONTROL
1002	X-3668-075-0	s	KNOB ASSY, CONTROL
1003	X-3738-905-1	o	WINDOW ASSY
1004	X-3738-906-2	o	FRONT PANEL ASSY
1005	X-3738-907-1	o	KEY PANEL ASSY
1006	2-284-744-00	o	CUSHION (B), KEY
1007	3-642-656-01	s	LEG
1008	3-668-008-02	s	PUSH BUTTON (3X5)
1009	3-668-012-00	s	RUBBER, DIAL KNOB
1010	3-672-782-02	s	KEY TOP (A) 'PLAY'
1011	3-672-782-11	s	KEY TOP (A) 'REC'
1012	3-672-783-02	s	KEY TOP (B) 'REW'
1013	3-672-783-12	s	KEY TOP (B) 'F FWD'
1014	3-672-783-32	s	KEY TOP (B) 'EJECT'
1015	3-672-783-42	s	KEY TOP (B) 'STOP'
1016	3-672-783-52	s	KEY TOP (B) 'PAUSE'
1017	3-688-814-01	s	CAP, SWITCH
1018	3-703-848-01	o	LABEL (N), SUB CAUTION
1019	3-717-370-01	o	KNOB, DIAL
1020	3-717-374-01	o	FRAME (23X12), ORNAMENTAL, SW
1021	3-717-382-01	s	KNOB, LEVER SW
1022	3-717-557-01	o	PLATE, KNOB
1023	3-717-613-01	o	PLATE ORNAMENTAL. LSW
1024	3-721-101-71	o	DOOR
1025	3-733-602-01	s	KEY TOP (S)
1026	3-733-605-01	s	COVER, LED
1027	3-733-606-01	s	PUSH BUTTON (5X9)
1028	3-738-906-01	s	KEY TOP (TR)
1029	3-738-907-01	s	FRAME, ORNAMENTAL, LEVER SW
1030	3-738-912-01	s	PIN (9), PUSH BUTTON
1031	3-738-924-02	o	PLATE, TOP
1032	3-738-925-03	o	PLATE (LEFT), SIDE
1033	3-738-926-03	o	PLATE (RIGHT), SIDE
1034	3-738-927-01	o	PLATE, BOTTOM
1035	4-309-349-00	s	SPRING
1036	4-866-613-00	s	SPRING, COMPRESSION

14-3. ELECTRICAL PARTS LIST

CAPACITOR, CHIP CERAMIC

Part No.	SP	Description			
1-163-083-00	s	CAP, CHIP CERAMIC	1pF	+-0.25pF	50V
1-163-085-00	s	CAP, CHIP CERAMIC	2pF	+-0.25pF	50V
1-163-087-00	s	CAP, CHIP CERAMIC	4pF	+-0.25pF	50V
1-163-089-00	s	CAP, CHIP CERAMIC	6pF	+-0.5pF	50V
1-163-091-00	s	CAP, CHIP CERAMIC	8pF	+-0.5pF	50V
1-163-093-00	s	CAP, CHIP CERAMIC	10pF	5%	50V
1-163-093-00	s	CAP, CHIP CERAMIC	10pF	5%	50V
1-163-097-00	s	CAP, CHIP CERAMIC	15pF	5%	50V
1-163-101-00	s	CAP, CHIP CERAMIC	22pF	5%	50V
1-163-105-00	s	CAP, CHIP CERAMIC	33pF	5%	50V
1-163-109-00	s	CAP, CHIP CERAMIC	47pF	5%	50V
1-163-113-00	s	CAP, CHIP CERAMIC	68pF	5%	50V
1-163-117-00	s	CAP, CHIP CERAMIC	100pF	5%	50V
1-163-121-00	s	CAP, CHIP CERAMIC	150pF	5%	50V
1-163-125-00	s	CAP, CHIP CERAMIC	220pF	5%	50V
1-163-129-00	s	CAP, CHIP CERAMIC	330pF	5%	50V
1-163-133-00	s	CAP, CHIP CERAMIC	470pF	5%	50V
1-163-137-00	s	CAP, CHIP CERAMIC	680pF	5%	50V
1-163-141-00	s	CAP, CHIP CERAMIC	1000pF	5%	50V
1-163-145-00	s	CAP, CHIP CERAMIC	1500pF	10%	50V
1-163-013-00	s	CAP, CHIP CERAMIC	2200pF	10%	50V
1-163-015-00	s	CAP, CHIP CERAMIC	3300pF	10%	50V
1-163-017-00	s	CAP, CHIP CERAMIC	4700pF	10%	50V
1-163-019-00	s	CAP, CHIP CERAMIC	6800pF	10%	50V
1-163-021-00	s	CAP, CHIP CERAMIC	0.01	10%	50V
1-163-023-00	s	CAP, CHIP CERAMIC	0.015	10%	50V
1-163-034-00	s	CAP, CHIP CERAMIC	0.033		50V
1-163-035-00	s	CAP, CHIP CERAMIC	0.047		50V
1-163-036-00	s	CAP, CHIP CERAMIC	0.068		50V
1-163-038-00	s	CAP, CHIP CERAMIC	0.1		50V

CAPACITOR, ELECTROLYTIC

Part No.	SP	Description			
1-124-902-00	s	CAP, ELECT	0.47	20%	50V
1-124-791-11	s	CAP, ELECT	1.0	20%	100V
1-124-925-11	s	CAP, ELECT	2.2	20%	100V
1-123-382-00	s	CAP, ELECT	3.3	20%	100V
1-124-927-00	s	CAP, ELECT	4.7	20%	100V
1-123-875-91	s	CAP, ELECT	10	20%	50V
1-124-915-11	s	CAP, ELECT	10	20%	63V
1-124-667-11	s	CAP, ELECT	10	20%	100V
1-124-908-11	s	CAP, ELECT	22	20%	50V
1-124-916-11	s	CAP, ELECT	22	20%	63V
1-124-929-11	s	CAP, ELECT	22	20%	100V
1-124-963-11	s	CAP, ELECT	33	20%	16V
1-124-482-11	s	CAP, ELECT	33	20%	35V
1-124-917-11	s	CAP, ELECT	33	20%	63V
1-124-930-11	s	CAP, ELECT	33	20%	100V
1-124-446-11	s	CAP, ELECT	47	20%	10V
1-124-477-11	s	CAP, ELECT	47	20%	25V
1-124-910-11	s	CAP, ELECT	47	20%	50V
1-124-918-11	s	CAP, ELECT	47	20%	63V
1-124-931-11	s	CAP, ELECT	47	20%	100V
1-124-443-00	s	CAP, ELECT	100	20%	10V
1-126-101-11	s	CAP, ELECT	100	20%	16V
1-124-478-11	s	CAP, ELECT	100	20%	25V
1-124-122-11	s	CAP, ELECT	100	20%	50V
1-124-572-11	s	CAP, ELECT	100	20%	63V
1-123-605-00	s	CAP, ELECT	100	20%	100V
1-124-444-00	s	CAP, ELECT	220	20%	10V
1-124-120-11	s	CAP, ELECT	220	20%	25V
1-124-484-11	s	CAP, ELECT	220	20%	35V
1-124-911-11	s	CAP, ELECT	220	20%	50V
1-124-919-51	s	CAP, ELECT	220	20%	63V
1-124-628-11	s	CAP, ELECT	220	20%	100V
1-124-442-00	s	CAP, ELECT	330	20%	6.3V
1-124-604-00	s	CAP, ELECT	330	20%	10V
1-124-119-00	s	CAP, ELECT	330	20%	16V
1-124-479-11	s	CAP, ELECT	330	20%	25V
1-124-485-11	s	CAP, ELECT	330	20%	35V
1-124-912-11	s	CAP, ELECT	330	20%	50V
1-124-472-11	s	CAP, ELECT	470	20%	10V
1-124-475-11	s	CAP, ELECT	470	20%	16V
1-124-480-11	s	CAP, ELECT	470	20%	25V
1-126-104-11	s	CAP, ELECT	470	20%	35V
1-124-913-11	s	CAP, ELECT	470	20%	50V
1-124-921-11	s	CAP, ELECT	470	20%	63V
1-124-471-00	s	CAP, ELECT	1000	20%	6.3V
1-124-473-11	s	CAP, ELECT	1000	20%	10V
1-124-555-00	s	CAP, ELECT	1000	20%	16V
1-124-557-11	s	CAP, ELECT	1000	20%	25V
1-126-105-11	s	CAP, ELECT	1000	20%	35V
1-124-637-11	s	CAP, ELECT	1000	20%	50V
1-124-922-11	s	CAP, ELECT	1000	20%	63V
1-124-893-11	s	CAP, ELECT	2200	20%	10V
1-124-556-11	s	CAP, ELECT	2200	20%	16V
1-124-563-11	s	CAP, ELECT	2200	20%	25V
1-124-618-11	s	CAP, ELECT	2200	20%	35V
1-124-607-11	s	CAP, ELECT	2200	20%	50V
1-124-621-11	s	CAP, ELECT	3300	20%	6.3V
1-124-887-00	s	CAP, ELECT	3300	20%	16V
1-124-636-00	s	CAP, ELECT	3300	20%	25V
1-124-762-00	s	CAP, ELECT	4700	20%	10V

(CAPACITOR, ELECTROLYTIC)

Part No.	SP	Description
1-124-898-11	s	CAP, ELECT 4700 20% 16V
1-124-564-11	s	CAP, ELECT 4700 20% 25V
1-124-891-11	s	CAP, ELECT 10000 20% 6.3V
1-124-763-00	s	CAP, ELECT 10000 20% 10V
1-124-902-00	s	CAP, ELECT 0.47 20% 50V
1-124-791-11	s	CAP, ELECT 1.0 20% 100V
1-124-925-11	s	CAP, ELECT 2.2 20% 100V
1-123-382-00	s	CAP, ELECT 3.3 20% 100V
1-124-927-00	s	CAP, ELECT 4.7 20% 100V
1-123-875-91	s	CAP, ELECT 10 20% 50V
1-124-908-11	s	CAP, ELECT 22 20% 50V
1-124-963-11	s	CAP, ELECT 33 20% 16V
1-124-482-11	s	CAP, ELECT 33 20% 35V
1-124-917-11	s	CAP, ELECT 33 20% 63V
1-124-446-11	s	CAP, ELECT 47 20% 10V
1-124-477-11	s	CAP, ELECT 47 20% 25V
1-124-910-11	s	CAP, ELECT 47 20% 50V
1-124-443-00	s	CAP, ELECT 100 20% 10V
1-126-101-11	s	CAP, ELECT 100 20% 16V
1-124-478-11	s	CAP, ELECT 100 20% 25V
1-124-122-11	s	CAP, ELECT 100 20% 50V
1-124-444-00	s	CAP, ELECT 220 20% 10V
1-124-120-11	s	CAP, ELECT 220 20% 25V
1-124-484-11	s	CAP, ELECT 220 20% 35V
1-124-911-11	s	CAP, ELECT 220 20% 50V
1-124-442-00	s	CAP, ELECT 330 20% 6.3V
1-124-604-00	s	CAP, ELECT 330 20% 10V
1-124-119-00	s	CAP, ELECT 330 20% 16V
1-124-479-11	s	CAP, ELECT 330 20% 25V
1-124-485-11	s	CAP, ELECT 330 20% 35V
1-124-912-11	s	CAP, ELECT 330 20% 50V
1-124-472-11	s	CAP, ELECT 470 20% 10V
1-124-475-11	s	CAP, ELECT 470 20% 16V
1-124-480-11	s	CAP, ELECT 470 20% 25V
1-126-104-11	s	CAP, ELECT 470 20% 35V
1-124-913-11	s	CAP, ELECT 470 20% 50V

RESISTOR, CHIP

Part No.	SP	Description
1-216-295-00	s	RES, CHIP 0 5% 1/10W
1-216-298-00	s	RES, CHIP 2.2 5% 1/10W
1-216-302-00	s	RES, CHIP 2.7 5% 1/10W
1-216-304-00	s	RES, CHIP 3.3 5% 1/10W
1-216-306-00	s	RES, CHIP 3.9 5% 1/10W
1-216-308-00	s	RES, CHIP 4.7 5% 1/10W
1-216-309-00	s	RES, CHIP 5.6 5% 1/10W
1-216-311-00	s	RES, CHIP 6.8 5% 1/10W
1-216-313-00	s	RES, CHIP 8.2 5% 1/10W
1-216-001-00	s	RES, CHIP 10 5% 1/10W
1-216-003-00	s	RES, CHIP 12 5% 1/10W
1-216-005-00	s	RES, CHIP 15 5% 1/10W
1-216-007-00	s	RES, CHIP 18 5% 1/10W
1-216-009-00	s	RES, CHIP 22 5% 1/10W
1-216-011-00	s	RES, CHIP 27 5% 1/10W
1-216-013-00	s	RES, CHIP 33 5% 1/10W
1-216-015-00	s	RES, CHIP 39 5% 1/10W
1-216-017-00	s	RES, CHIP 47 5% 1/10W
1-216-019-00	s	RES, CHIP 56 5% 1/10W
1-216-021-00	s	RES, CHIP 68 5% 1/10W
1-216-023-00	s	RES, CHIP 82 5% 1/10W
1-216-025-00	s	RES, CHIP 100 5% 1/10W
1-216-027-00	s	RES, CHIP 120 5% 1/10W
1-216-029-00	s	RES, CHIP 150 5% 1/10W
1-216-031-00	s	RES, CHIP 180 5% 1/10W
1-216-033-00	s	RES, CHIP 220 5% 1/10W
1-216-035-00	s	RES, CHIP 270 5% 1/10W
1-216-037-00	s	RES, CHIP 330 5% 1/10W
1-216-039-00	s	RES, CHIP 390 5% 1/10W
1-216-041-00	s	RES, CHIP 470 5% 1/10W
1-216-043-00	s	RES, CHIP 560 5% 1/10W
1-216-045-00	s	RES, CHIP 680 5% 1/10W
1-216-047-00	s	RES, CHIP 820 5% 1/10W
1-216-049-00	s	RES, CHIP 1k 5% 1/10W
1-216-051-00	s	RES, CHIP 1.2k 5% 1/10W
1-216-053-00	s	RES, CHIP 1.5k 5% 1/10W
1-216-055-00	s	RES, CHIP 1.8k 5% 1/10W
1-216-057-00	s	RES, CHIP 2.2k 5% 1/10W
1-216-059-00	s	RES, CHIP 2.7k 5% 1/10W
1-216-061-00	s	RES, CHIP 3.3k 5% 1/10W
1-216-063-00	s	RES, CHIP 3.9k 5% 1/10W
1-216-065-00	s	RES, CHIP 4.7k 5% 1/10W
1-216-067-00	s	RES, CHIP 5.6k 5% 1/10W
1-216-069-00	s	RES, CHIP 6.8k 5% 1/10W
1-216-071-00	s	RES, CHIP 8.2k 5% 1/10W
1-216-073-00	s	RES, CHIP 10k 5% 1/10W
1-216-075-00	s	RES, CHIP 12k 5% 1/10W
1-216-077-00	s	RES, CHIP 15k 5% 1/10W
1-216-079-00	s	RES, CHIP 18k 5% 1/10W
1-216-081-00	s	RES, CHIP 22k 5% 1/10W
1-216-083-00	s	RES, CHIP 27k 5% 1/10W
1-216-085-00	s	RES, CHIP 33k 5% 1/10W
1-216-087-00	s	RES, CHIP 39k 5% 1/10W
1-216-089-00	s	RES, CHIP 47k 5% 1/10W
1-216-091-00	s	RES, CHIP 56k 5% 1/10W
1-216-093-00	s	RES, CHIP 68k 5% 1/10W
1-216-095-00	s	RES, CHIP 82k 5% 1/10W
1-216-097-00	s	RES, CHIP 100k 5% 1/10W
1-216-099-00	s	RES, CHIP 120k 5% 1/10W
1-216-101-00	s	RES, CHIP 150k 5% 1/10W

(RESISTOR, CHIP)

Part No.	SP	Description
1-216-103-00	s	RES, CHIP 180k 5% 1/10W
1-216-105-00	s	RES, CHIP 220k 5% 1/10W
1-216-107-00	s	RES, CHIP 270k 5% 1/10W
1-216-109-00	s	RES, CHIP 330k 5% 1/10W
1-216-111-00	s	RES, CHIP 390k 5% 1/10W
1-216-113-00	s	RES, CHIP 470k 5% 1/10W
1-216-115-00	s	RES, CHIP 560k 5% 1/10W
1-216-117-00	s	RES, CHIP 680k 5% 1/10W
1-216-119-00	s	RES, CHIP 820k 5% 1/10W
1-216-121-00	s	RES, CHIP 1.0M 5% 1/10W
1-216-123-00	s	RES, CHIP 1.2M 5% 1/10W
1-216-125-00	s	RES, CHIP 1.5M 5% 1/10W
1-216-127-00	s	RES, CHIP 1.8M 5% 1/10W
1-216-129-00	s	RES, CHIP 2.2M 5% 1/10W
1-216-131-00	s	RES, CHIP 2.7M 5% 1/10W
1-216-133-00	s	RES, CHIP 3.3M 5% 1/10W

CONNECTOR

Part No.	SP	Description
1-506-467-11	o	RECEPTACLE 2P MALE (STRAIGHT TYPE)
1-506-481-11	o	RECEPTACLE 2P MALE (ANGLE TYPE)
1-562-147-11	o	HOUSING 2P
1-563-088-11	o	CONTACT AWG24-30
1-563-089-11	o	CONTACT AWG32
1-506-468-11	o	RECEPTACLE 3P MALE (STRAIGHT TYPE)
1-506-482-11	o	RECEPTACLE 3P MALE (ANGLE TYPE)
1-562-148-11	o	HOUSING 3P
1-563-088-11	o	CONTACT AWG24-30
1-563-089-11	o	CONTACT AWG32
1-506-469-11	o	RECEPTACLE 4P MALE (STRAIGHT TYPE)
1-506-483-21	o	RECEPTACLE 4P MALE (ANGLE TYPE)
1-562-149-11	o	HOUSING 4P
1-563-088-11	o	CONTACT AWG24-30
1-563-089-11	o	CONTACT AWG32
1-506-470-11	o	RECEPTACLE 5P MALE (STRAIGHT TYPE)
1-506-484-11	o	RECEPTACLE 5P MALE (ANGLE TYPE)
1-562-150-11	o	HOUSING 5P
1-563-088-11	o	CONTACT AWG24-30
1-563-089-11	o	CONTACT AWG32
1-506-471-31	o	RECEPTACLE 6P MALE (STRAIGHT TYPE)
1-506-485-11	o	RECEPTACLE 6P MALE (ANGLE TYPE)
1-562-151-11	o	HOUSING 6P
1-563-088-11	o	CONTACT AWG24-30
1-563-089-11	o	CONTACT AWG32
1-506-472-11	o	RECEPTACLE 7P MALE (STRAIGHT TYPE)
1-506-486-11	o	RECEPTACLE 7P MALE (ANGLE TYPE)
1-562-152-11	o	HOUSING 7P
1-563-088-11	o	CONTACT AWG24-30
1-563-089-11	o	CONTACT AWG32
1-506-473-11	o	RECEPTACLE 8P MALE (STRAIGHT TYPE)
1-506-487-11	o	RECEPTACLE 8P MALE (ANGLE TYPE)
1-562-153-11	o	HOUSING 8P
1-563-088-11	o	CONTACT AWG24-30
1-563-089-11	o	CONTACT AWG32
1-506-474-11	o	RECEPTACLE 9P MALE (STRAIGHT TYPE)
1-506-488-11	o	RECEPTACLE 9P MALE (ANGLE TYPE)
1-562-154-11	o	HOUSING 9P
1-563-088-11	o	CONTACT AWG24-30
1-563-089-11	o	CONTACT AWG32
1-506-475-11	o	RECEPTACLE 10P MALE (STRAIGHT TYPE)
1-506-489-11	o	RECEPTACLE 10P MALE (ANGLE TYPE)
1-562-155-11	o	HOUSING 10P
1-563-088-11	o	CONTACT AWG24-30
1-563-089-11	o	CONTACT AWG32
1-506-476-11	o	RECEPTACLE 11P MALE (STRAIGHT TYPE)
1-506-490-21	o	RECEPTACLE 11P MALE (ANGLE TYPE)
1-562-156-11	o	HOUSING 11P
1-563-088-11	o	CONTACT AWG24-30
1-563-089-11	o	CONTACT AWG32
1-506-477-11	o	RECEPTACLE 12P MALE (STRAIGHT TYPE)
1-506-491-11	o	RECEPTACLE 12P MALE (ANGLE TYPE)
1-562-157-11	o	HOUSING 12P
1-563-088-11	o	CONTACT AWG24-30
1-563-089-11	o	CONTACT AWG32
1-506-478-11	o	RECEPTACLE 13P MALE (STRAIGHT TYPE)
1-506-492-11	o	RECEPTACLE 13P MALE (ANGLE TYPE)
1-562-627-11	o	HOUSING 13P
1-563-088-11	o	CONTACT AWG24-30
1-563-089-11	o	CONTACT AWG32

(CONNECTOR)

Part No.	SP	Description		
1-506-479-11	o	RECEPTACLE	14P MALE	(STRAIGHT TYPE)
1-506-493-11	o	RECEPTACLE	14P MALE	(ANGLE TYPE)
1-562-185-11	o	HOUSING	14P	
1-563-088-11	o	CONTACT	AWG24-30	
1-563-089-11	o	CONTACT	AWG32	
1-506-480-11	o	RECEPTACLE	15P MALE	(STRAIGHT TYPE)
1-506-494-11	o	RECEPTACLE	15P MALE	(ANGLE TYPE)
1-562-958-11	o	HOUSING	15P	
1-563-088-11	o	CONTACT	AWG24-30	
1-563-089-11	o	CONTACT	AWG32	

INDUCTOR, MICRO

Part No.	SP	Description		
1-408-876-00	s	INDUCTOR, MICRO	0.18	5%
1-408-877-00	s	INDUCTOR, MICRO	0.22	5%
1-408-878-00	s	INDUCTOR, MICRO	0.33	5%
1-408-879-21	s	INDUCTOR, MICRO	0.47	5%
1-408-931-00	s	INDUCTOR, MICRO	0.56	5%
1-408-880-00	s	INDUCTOR, MICRO	0.68	5%
1-408-763-00	s	INDUCTOR, MICRO	0.82	5%
1-408-397-00	s	INDUCTOR, MICRO	1.0	5%
1-408-398-00	s	INDUCTOR, MICRO	1.2	5%
1-408-399-00	s	INDUCTOR, MICRO	1.5	5%
1-408-400-00	s	INDUCTOR, MICRO	1.8	5%
1-408-401-00	s	INDUCTOR, MICRO	2.2	5%
1-408-402-00	s	INDUCTOR, MICRO	2.7	5%
1-408-403-00	s	INDUCTOR, MICRO	3.3	5%
1-408-404-00	s	INDUCTOR, MICRO	3.9	5%
1-408-405-00	s	INDUCTOR, MICRO	4.7	5%
1-408-406-00	s	INDUCTOR, MICRO	5.6	5%
1-408-407-00	s	INDUCTOR, MICRO	6.8	5%
1-408-408-00	s	INDUCTOR, MICRO	8.2	5%
1-408-409-00	s	INDUCTOR, MICRO	10	5%
1-408-410-00	s	INDUCTOR, MICRO	12	5%
1-408-411-00	s	INDUCTOR, MICRO	15	5%
1-408-412-00	s	INDUCTOR, MICRO	18	5%
1-408-413-00	s	INDUCTOR, MICRO	22	5%
1-408-414-00	s	INDUCTOR, MICRO	27	5%
1-408-415-00	s	INDUCTOR, MICRO	33	5%
1-408-416-00	s	INDUCTOR, MICRO	39	5%
1-408-417-21	s	INDUCTOR, MICRO	47	5%
1-408-418-00	s	INDUCTOR, MICRO	56	5%
1-408-419-00	s	INDUCTOR, MICRO	68	5%
1-408-420-00	s	INDUCTOR, MICRO	82	5%
1-408-421-00	s	INDUCTOR, MICRO	100	5%
1-408-422-00	s	INDUCTOR, MICRO	120	5%
1-408-423-00	s	INDUCTOR, MICRO	150	5%
1-408-424-00	s	INDUCTOR, MICRO	180	5%
1-408-425-00	s	INDUCTOR, MICRO	220	5%
1-408-426-00	s	INDUCTOR, MICRO	270	5%
1-408-427-00	s	INDUCTOR, MICRO	330	5%
1-408-428-00	s	INDUCTOR, MICRO	390	5%
1-408-429-00	s	INDUCTOR, MICRO	470	5%

AA-16 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-6713-363-A	o	MOUNTED CIRCUIT BOARD, AA-16
C1	1-162-294-31	s	CERAMIC 0.001uF 10% 50V
C12	1-162-207-31	s	CERAMIC 22PF 5% 50V
C100	1-126-103-11	s	ELECT 470uF 20% 16V
C101	1-162-294-31	s	CERAMIC 0.001uF 10% 50V
C112	1-162-207-31	s	CERAMIC 22PF 5% 50V
C150	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
D10	8-719-911-19	s	DIODE 1SS119
D11	8-719-911-19	s	DIODE 1SS119
D110	8-719-911-19	s	DIODE 1SS119
D111	8-719-911-19	s	DIODE 1SS119
D150	8-719-109-93	s	DIODE RD6.2ES-B2
IC101	8-759-981-98	s	IC RC4560DD
PS1	1-532-727-11	s	LINK, IC 0.25A
Q10	8-729-306-92	s	TRANSISTOR 2SD669A
Q11	8-729-304-92	s	TRANSISTOR 2SB649A
Q12	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q110	8-729-306-92	s	TRANSISTOR 2SD669A
Q111	8-729-304-92	s	TRANSISTOR 2SB649A
Q112	8-729-201-05	s	TRANSISTOR 2SC2878-B
R1	1-247-826-00	s	CARBON 620 5% 1/4W
R2	1-249-394-11	s	CARBON 12 5% 1/4W
R3	1-249-426-11	s	CARBON 5.6K 5% 1/4W
R4	1-249-426-11	s	CARBON 5.6K 5% 1/4W
R5	1-249-415-11	s	CARBON 680 5% 1/4W
R6	1-249-413-11	s	CARBON 470 5% 1/4W
R7	1-249-418-11	s	CARBON 1.2K 5% 1/4W
R8	1-249-427-11	s	CARBON 6.8K 5% 1/4W
R10	1-249-417-11	s	CARBON 1K 5% 1/4W
R11	1-249-426-11	s	CARBON 5.6K 5% 1/4W
R12	1-249-437-11	s	CARBON 47K 5% 1/4W
R13	1-249-429-11	s	CARBON 10K 5% 1/4W
R14	1-249-429-11	s	CARBON 10K 5% 1/4W
R15	1-249-393-11	s	CARBON 10 5% 1/4W
R16	1-249-417-11	s	CARBON 1K 5% 1/4W
R17	1-249-417-11	s	CARBON 1K 5% 1/4W
R18	1-249-478-11	s	CARBON 2.2 5% 1/2W
R19	1-249-478-11	s	CARBON 2.2 5% 1/2W
R20	1-249-389-11	s	CARBON 4.7 5% 1/4W
R21	1-249-417-11	s	CARBON 1K 5% 1/4W
R101	1-247-826-00	s	CARBON 620 5% 1/4W
R102	1-249-394-11	s	CARBON 12 5% 1/4W
R103	1-249-426-11	s	CARBON 5.6K 5% 1/4W
R104	1-249-426-11	s	CARBON 5.6K 5% 1/4W
R105	1-249-415-11	s	CARBON 680 5% 1/4W
R106	1-249-413-11	s	CARBON 470 5% 1/4W
R107	1-249-418-11	s	CARBON 1.2K 5% 1/4W
R108	1-249-427-11	s	CARBON 6.8K 5% 1/4W
R110	1-249-417-11	s	CARBON 1K 5% 1/4W
R111	1-249-426-11	s	CARBON 5.6K 5% 1/4W
R112	1-249-437-11	s	CARBON 47K 5% 1/4W
R113	1-249-429-11	s	CARBON 10K 5% 1/4W
R114	1-249-429-11	s	CARBON 10K 5% 1/4W
R115	1-249-393-11	s	CARBON 10 5% 1/4W
R116	1-249-417-11	s	CARBON 1K 5% 1/4W

(AA-16 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R117	1-249-417-11	s	CARBON 1K 5% 1/4W
R118	1-249-478-11	s	CARBON 2.2 5% 1/2W
R119	1-249-478-11	s	CARBON 2.2 5% 1/2W
R120	1-249-389-11	s	CARBON 4.7 5% 1/4W
R121	1-249-417-11	s	CARBON 1K 5% 1/4W
R150	1-249-417-11	s	CARBON 1K 5% 1/4W
T1	1-423-261-11	s	TRANSFORMER, INPUT
T10	1-427-586-11	s	TRANSFORMER, INPUT/OUTPUT
T101	1-423-261-11	s	TRANSFORMER, INPUT
T110	1-427-586-11	s	TRANSFORMER, INPUT/OUTPUT

AC-65 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-533-189-11	o	HOLDER, FUSE
1pc	1-618-591-11	o	PRINTED CIRCUIT BOARD, AC-65
CN1	1-506-371-00	o	CONNECTOR 2P
F1	⚠1-532-743-11	s	FUSE, 2A 125V

NOTE:Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

.For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

AU-127 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7061-778-A	o	MOUNTED CIRCUIT BOARD, AU-127
1pc	7-682-903-01	s	SCREW +PWH 3X5
C1	1-124-360-00	s	ELECT 1000uF 20% 16V
C2	1-126-233-11	s	ELECT 22uF 20% 50V
C3	1-126-103-11	s	ELECT 470uF 20% 16V
C101	1-130-471-00	s	MYLAR 0.001uF 5% 50V
C102	1-123-875-11	s	ELECT 10uF 20% 50V
C103	1-123-875-11	s	ELECT 10uF 20% 50V
C104	1-123-875-11	s	ELECT 10uF 20% 50V
C105	1-161-051-00	s	CERAMIC 0.01uF 10% 50V
C113	1-123-875-11	s	ELECT 10uF 20% 50V
C115	1-107-202-00	s	MICA 10PF 5% 500V
C116	1-161-051-00	s	CERAMIC 0.01uF 10% 50V
C119	1-123-875-11	s	ELECT 10uF 20% 50V
C120	1-161-055-00	s	CERAMIC 0.022uF 10% 50V
C121	1-161-055-00	s	CERAMIC 0.022uF 10% 50V
C201	1-130-471-00	s	MYLAR 0.001uF 5% 50V
C202	1-123-875-11	s	ELECT 10uF 20% 50V
C203	1-123-875-11	s	ELECT 10uF 20% 50V
C204	1-123-875-11	s	ELECT 10uF 20% 50V
C205	1-161-051-00	s	CERAMIC 0.01uF 10% 50V
C213	1-123-875-11	s	ELECT 10uF 20% 50V
C215	1-107-202-00	s	MICA 10PF 5% 500V
C216	1-161-051-00	s	CERAMIC 0.01uF 10% 50V
C219	1-123-875-11	s	ELECT 10uF 20% 50V
C220	1-161-055-00	s	CERAMIC 0.022uF 10% 50V
C221	1-161-494-00	s	CERAMIC 0.022uF 25V
C301	1-123-875-11	s	ELECT 10uF 20% 50V
C303	1-123-875-11	s	ELECT 10uF 20% 50V
C304	1-123-875-11	s	ELECT 10uF 20% 50V
C305	1-123-875-11	s	ELECT 10uF 20% 50V
C359	1-161-021-11	s	CERAMIC 0.047uF 10% 25V
C364	1-107-202-00	s	MICA 10PF 5% 500V
C401	1-161-051-00	s	CERAMIC 0.01uF 10% 50V
C402	1-124-927-11	s	ELECT 4.7uF 20% 100V
C405	1-107-202-00	s	MICA 10PF 5% 500V
C406	1-161-494-00	s	CERAMIC 0.022uF 25V
C407	1-161-021-11	s	CERAMIC 0.047uF 10% 25V
C501	1-161-051-00	s	CERAMIC 0.01uF 10% 50V
C502	1-124-927-11	s	ELECT 4.7uF 20% 100V
C505	1-107-208-00	s	MICA 18PF 5% 500V
C506	1-161-494-00	s	CERAMIC 0.022uF 25V
C507	1-161-021-11	s	CERAMIC 0.047uF 10% 25V
C604	1-123-875-11	s	ELECT 10uF 20% 50V
C704	1-123-875-11	s	ELECT 10uF 20% 50V
C804	1-130-497-00	s	MYLAR 0.15uF 5% 50V
C904	1-130-497-00	s	MYLAR 0.15uF 5% 50V
C909	1-123-875-11	s	ELECT 10uF 20% 50V
CN208	1-506-471-11	s	CONNECTOR, 6P, MALE
CN211	1-506-471-11	s	CONNECTOR, 6P, MALE
D1	8-719-109-93	s	DIODE RD6.2ES-B2
D2	8-719-109-57	s	DIODE RD2.4ES-B2
D4	8-719-200-02	s	DIODE 10E2
D5	8-719-200-02	s	DIODE 10E2
D8	8-719-200-02	s	DIODE 10E2
D9	8-719-200-02	s	DIODE 10E2
D11	8-719-911-19	s	DIODE 1SS119

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Ref. No. or Q'ty	Part No.	SP	Description
D101	8-719-911-19	s	DIODE 1SS119
D102	8-719-109-93	s	DIODE RD6.2ES-B2
D103	8-719-911-19	s	DIODE 1SS119
D104	8-719-911-19	s	DIODE 1SS119
D106	8-719-911-19	s	DIODE 1SS119
D107	8-719-109-93	s	DIODE RD6.2ES-B2
D201	8-719-911-19	s	DIODE 1SS119
D202	8-719-109-93	s	DIODE RD6.2ES-B2
D203	8-719-911-19	s	DIODE 1SS119
D204	8-719-911-19	s	DIODE 1SS119
D206	8-719-911-19	s	DIODE 1SS119
D207	8-719-109-93	s	DIODE RD6.2ES-B2
D351	8-719-911-19	s	DIODE 1SS119
D352	8-719-911-19	s	DIODE 1SS119
D354	8-719-911-19	s	DIODE 1SS119
D401	8-719-109-93	s	DIODE RD6.2ES-B2
D402	8-719-911-19	s	DIODE 1SS119
D403	8-719-911-19	s	DIODE 1SS119
D404	8-719-911-19	s	DIODE 1SS119
D405	8-719-911-19	s	DIODE 1SS119
D501	8-719-109-93	s	DIODE RD6.2ES-B2
D502	8-719-911-19	s	DIODE 1SS119
D503	8-719-911-19	s	DIODE 1SS119
D504	8-719-911-19	s	DIODE 1SS119
D505	8-719-911-19	s	DIODE 1SS119
D601	8-719-911-19	s	DIODE 1SS119
D602	8-719-911-19	s	DIODE 1SS119
D701	8-719-911-19	s	DIODE 1SS119
D702	8-719-911-19	s	DIODE 1SS119
#IC101	8-759-700-62	s	IC NJM4562D
#IC102	8-759-700-62	s	IC NJM4562D
IC103	8-759-040-53	s	IC MC14053BCP
#IC201	8-759-700-62	s	IC NJM4562D
IC301	8-759-990-82	s	IC TL082CP
IC302	8-759-208-08	s	IC TC4052BPHB
#IC351	8-759-700-62	s	IC NJM4562D
#IC401	8-759-700-62	s	IC NJM4562D
#IC501	8-759-700-62	s	IC NJM4562D
IC601	8-759-208-08	s	IC TC4052BPHB
IC602	8-759-040-53	s	IC MC14053BCP
#IC603	8-759-700-62	s	IC NJM4562D
IC801	8-759-802-46	s	IC LA4550
L101	1-407-519-00	s	INDUCTOR 8UH
L201	1-407-519-00	s	INDUCTOR 8UH
Q1	8-729-119-76	s	TRANSISTOR 2SA1115P
Q2	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q3	8-729-119-76	s	TRANSISTOR 2SA1115P
Q4	8-729-119-76	s	TRANSISTOR 2SA1115P
Q5	8-729-119-76	s	TRANSISTOR 2SA1115P
Q101	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q102	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q103	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q104	8-729-900-89	s	TRANSISTOR DTC144ES
Q201	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q202	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q203	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q204	8-729-900-89	s	TRANSISTOR DTC144ES
Q351	8-729-201-05	s	TRANSISTOR 2SC2878-B

NOTE:Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

.For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

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Ref. No. or Q'ty	Part No.	SP	Description
Q352	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q401	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q402	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q403	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q501	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q502	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q503	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q601	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q602	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q701	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q702	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q801	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q802	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q803	8-729-201-05	s	TRANSISTOR 2SC2878-B
#Q901	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q902	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q903	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q904	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
R1	1-249-428-11	s	CARBON 8.2K 5% 1/4W
R2	1-249-417-11	s	CARBON 1K 5% 1/4W
R3	1-249-429-11	s	CARBON 10K 5% 1/4W
R4	1-249-405-11	s	CARBON 100 5% 1/4W
R5	1-249-433-11	s	CARBON 22K 5% 1/4W
R6	1-249-433-11	s	CARBON 22K 5% 1/4W
R7	1-249-433-11	s	CARBON 22K 5% 1/4W
R8	1-249-433-11	s	CARBON 22K 5% 1/4W
R9	1-249-433-11	s	CARBON 22K 5% 1/4W
R10	1-249-433-11	s	CARBON 22K 5% 1/4W
R11	1-249-441-11	s	CARBON 100K 5% 1/4W
R12	1-249-441-11	s	CARBON 100K 5% 1/4W
R13	1-249-441-11	s	CARBON 100K 5% 1/4W
R14	1-249-401-11	s	CARBON 47 5% 1/4W
R101	1-249-437-11	s	CARBON 47K 5% 1/4W
R102	1-249-437-11	s	CARBON 47K 5% 1/4W
R103	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R104	1-247-891-00	s	CARBON 330K 5% 1/4W
R105	1-249-417-11	s	CARBON 1K 5% 1/4W
R106	1-249-429-11	s	CARBON 10K 5% 1/4W
R107	1-249-437-11	s	CARBON 47K 5% 1/4W
R108	1-249-437-11	s	CARBON 47K 5% 1/4W
R109	1-249-429-11	s	CARBON 10K 5% 1/4W
R110	1-249-437-11	s	CARBON 47K 5% 1/4W
R111	1-249-437-11	s	CARBON 47K 5% 1/4W
R112	1-249-429-11	s	CARBON 10K 5% 1/4W
R113	1-249-401-11	s	CARBON 47 5% 1/4W
R114	1-247-887-00	s	CARBON 220K 5% 1/4W
R115	1-249-405-11	s	CARBON 100 5% 1/4W
R116	1-249-405-11	s	CARBON 100 5% 1/4W
R117	1-249-433-11	s	CARBON 22K 5% 1/4W
R118	1-249-433-11	s	CARBON 22K 5% 1/4W
R119	1-249-417-11	s	CARBON 1K 5% 1/4W
R120	1-249-441-11	s	CARBON 100K 5% 1/4W
R121	1-249-437-11	s	CARBON 47K 5% 1/4W
R122	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R123	1-249-437-11	s	CARBON 47K 5% 1/4W
R124	1-249-417-11	s	CARBON 1K 5% 1/4W
R127	1-249-405-11	s	CARBON 100 5% 1/4W
R128	1-249-437-11	s	CARBON 47K 5% 1/4W

(AU-127 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R129	1-249-437-11	s	CARBON 47K 5% 1/4W
R201	1-249-437-11	s	CARBON 47K 5% 1/4W
R202	1-249-437-11	s	CARBON 47K 5% 1/4W
R203	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R204	1-247-891-00	s	CARBON 330K 5% 1/4W
R205	1-249-417-11	s	CARBON 1K 5% 1/4W
R206	1-249-429-11	s	CARBON 10K 5% 1/4W
R207	1-249-437-11	s	CARBON 47K 5% 1/4W
R208	1-249-437-11	s	CARBON 47K 5% 1/4W
R209	1-249-429-11	s	CARBON 10K 5% 1/4W
R210	1-249-437-11	s	CARBON 47K 5% 1/4W
R211	1-249-437-11	s	CARBON 47K 5% 1/4W
R212	1-249-429-11	s	CARBON 10K 5% 1/4W
R213	1-249-401-11	s	CARBON 47 5% 1/4W
R214	1-247-887-00	s	CARBON 220K 5% 1/4W
R215	1-249-405-11	s	CARBON 100 5% 1/4W
R216	1-249-405-11	s	CARBON 100 5% 1/4W
R217	1-249-433-11	s	CARBON 22K 5% 1/4W
R219	1-249-417-11	s	CARBON 1K 5% 1/4W
R220	1-249-441-11	s	CARBON 100K 5% 1/4W
R221	1-249-437-11	s	CARBON 47K 5% 1/4W
R222	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R223	1-249-437-11	s	CARBON 47K 5% 1/4W
R224	1-249-417-11	s	CARBON 1K 5% 1/4W
R227	1-249-405-11	s	CARBON 100 5% 1/4W
R228	1-249-437-11	s	CARBON 47K 5% 1/4W
R301	1-249-437-11	s	CARBON 47K 5% 1/4W
R302	1-249-437-11	s	CARBON 47K 5% 1/4W
R303	1-249-405-11	s	CARBON 100 5% 1/4W
R305	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R306	1-249-429-11	s	CARBON 10K 5% 1/4W
R307	1-249-437-11	s	CARBON 47K 5% 1/4W
R308	1-249-437-11	s	CARBON 47K 5% 1/4W
R309	1-249-437-11	s	CARBON 47K 5% 1/4W
R311	1-249-437-11	s	CARBON 47K 5% 1/4W
R312	1-249-433-11	s	CARBON 22K 5% 1/4W
R313	1-249-433-11	s	CARBON 22K 5% 1/4W
R314	1-249-433-11	s	CARBON 22K 5% 1/4W
R315	1-249-433-11	s	CARBON 22K 5% 1/4W
R351	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R352	1-249-441-11	s	CARBON 100K 5% 1/4W
R353	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R354	1-249-437-11	s	CARBON 47K 5% 1/4W
R355	1-249-385-11	s	CARBON 2.2 5% 1/4W
R356	1-249-434-11	s	CARBON 27K 5% 1/4W
R358	1-249-429-11	s	CARBON 10K 5% 1/4W
R359	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R360	1-249-437-11	s	CARBON 47K 5% 1/4W
R361	1-249-437-11	s	CARBON 47K 5% 1/4W
R362	1-249-437-11	s	CARBON 47K 5% 1/4W
R364	1-249-433-11	s	CARBON 22K 5% 1/4W
R365	1-249-433-11	s	CARBON 22K 5% 1/4W
R366	1-249-437-11	s	CARBON 47K 5% 1/4W
R367	1-249-437-11	s	CARBON 47K 5% 1/4W
R370	1-249-437-11	s	CARBON 47K 5% 1/4W
R371	1-249-437-11	s	CARBON 47K 5% 1/4W
R372	1-249-437-11	s	CARBON 47K 5% 1/4W
R373	1-249-433-11	s	CARBON 22K 5% 1/4W
R374	1-249-437-11	s	CARBON 47K 5% 1/4W

NOTE:Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

.For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

(AU-127 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R375	1-249-433-11	s	CARBON 22K 5% 1/4W
R376	1-249-433-11	s	CARBON 22K 5% 1/4W
R377	1-249-433-11	s	CARBON 22K 5% 1/4W
R378	1-249-417-11	s	CARBON 1K 5% 1/4W
R379	1-249-441-11	s	CARBON 100K 5% 1/4W
R380	1-249-429-11	s	CARBON 10K 5% 1/4W
R401	1-249-417-11	s	CARBON 1K 5% 1/4W
R402	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R404	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R405	1-249-437-11	s	CARBON 47K 5% 1/4W
R406	1-249-422-11	s	CARBON 2.7K 5% 1/4W
R407	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R409	1-249-433-11	s	CARBON 22K 5% 1/4W
R410	1-249-433-11	s	CARBON 22K 5% 1/4W
R411	1-249-433-11	s	CARBON 22K 5% 1/4W
R412	1-249-422-11	s	CARBON 2.7K 5% 1/4W
R413	1-249-429-11	s	CARBON 10K 5% 1/4W
R414	1-249-441-11	s	CARBON 100K 5% 1/4W
R415	1-249-417-11	s	CARBON 1K 5% 1/4W
R416	1-249-441-11	s	CARBON 100K 5% 1/4W
R417	1-249-429-11	s	CARBON 10K 5% 1/4W
R418	1-249-431-11	s	CARBON 15K 5% 1/4W
R501	1-249-417-11	s	CARBON 1K 5% 1/4W
R502	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R504	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R505	1-249-437-11	s	CARBON 47K 5% 1/4W
R506	1-249-422-11	s	CARBON 2.7K 5% 1/4W
R507	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R509	1-249-433-11	s	CARBON 22K 5% 1/4W
R510	1-249-433-11	s	CARBON 22K 5% 1/4W
R511	1-249-433-11	s	CARBON 22K 5% 1/4W
R512	1-249-422-11	s	CARBON 2.7K 5% 1/4W
R513	1-249-429-11	s	CARBON 10K 5% 1/4W
R514	1-249-441-11	s	CARBON 100K 5% 1/4W
R515	1-249-417-11	s	CARBON 1K 5% 1/4W
R516	1-249-441-11	s	CARBON 100K 5% 1/4W
R517	1-249-429-11	s	CARBON 10K 5% 1/4W
R601	1-249-437-11	s	CARBON 47K 5% 1/4W
R602	1-249-429-11	s	CARBON 10K 5% 1/4W
R603	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R604	1-249-437-11	s	CARBON 47K 5% 1/4W
R605	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R606	1-249-419-11	s	CARBON 1.5K 5% 1/4W
R607	1-249-429-11	s	CARBON 10K 5% 1/4W
R608	1-249-433-11	s	CARBON 22K 5% 1/4W
R609	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R610	1-249-411-11	s	CARBON 330 5% 1/4W
R611	1-249-389-11	s	CARBON 4.7 5% 1/4W
R701	1-249-437-11	s	CARBON 47K 5% 1/4W
R702	1-249-429-11	s	CARBON 10K 5% 1/4W
R703	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R704	1-249-437-11	s	CARBON 47K 5% 1/4W
R705	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R706	1-249-419-11	s	CARBON 1.5K 5% 1/4W
R707	1-249-429-11	s	CARBON 10K 5% 1/4W
R708	1-249-433-11	s	CARBON 22K 5% 1/4W
R709	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R710	1-249-411-11	s	CARBON 330 5% 1/4W
R711	1-249-389-11	s	CARBON 4.7 5% 1/4W
R801	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R802	1-249-439-11	s	CARBON 68K 5% 1/4W
R803	1-249-419-11	s	CARBON 1.5K 5% 1/4W
R804	1-249-407-11	s	CARBON 150 5% 1/4W
R805	1-249-437-11	s	CARBON 47K 5% 1/4W
R806	1-249-389-11	s	CARBON 4.7 5% 1/4W
R807	1-249-415-11	s	CARBON 680 5% 1/4W
R808	1-249-389-11	s	CARBON 4.7 5% 1/4W
R809	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R811	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R812	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R901	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R902	1-249-439-11	s	CARBON 68K 5% 1/4W
R903	1-249-419-11	s	CARBON 1.5K 5% 1/4W
R904	1-249-407-11	s	CARBON 150 5% 1/4W
R905	1-249-437-11	s	CARBON 47K 5% 1/4W
R906	1-249-389-11	s	CARBON 4.7 5% 1/4W
R907	1-249-415-11	s	CARBON 680 5% 1/4W
R908	1-249-389-11	s	CARBON 4.7 5% 1/4W
R909	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R911	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R912	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R913	1-249-437-11	s	CARBON 47K 5% 1/4W
R914	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R915	1-249-417-11	s	CARBON 1K 5% 1/4W
R916	1-249-441-11	s	CARBON 100K 5% 1/4W
RV101	1-228-996-00	s	RES, ADJ, METAL 47K
RV201	1-228-996-00	s	RES, ADJ, METAL 47K
RV301	1-228-995-00	s	RES, ADJ, METAL 22K
RV302	1-228-995-00	s	RES, ADJ, METAL 22K
RV351	1-228-996-00	s	RES, ADJ, METAL 47K
RV401	1-228-993-00	s	RES, ADJ, METAL 4.7K
RV501	1-228-993-00	s	RES, ADJ, METAL 4.7K
RV601	1-228-990-00	s	RES, ADJ, METAL 1K
RV701	1-228-990-00	s	RES, ADJ, METAL 1K

CP-141 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-631-807-11	o	PRINTED CIRCUIT BOARD, CP-141
R001	1-215-392-00	s	METAL 62 1% 1/6W
R002	1-247-804-11	s	CARBON 75 5% 1/4W
R003	1-215-376-00	s	METAL 13 1% 1/6W

NOTE:Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

.For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

DC-45 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7061-771-A	o	MOUNTED CIRCUIT BOARD, DC-45
2pcs	1-533-189-11	o	HOLDER, FUSE
2pcs	2-371-561-00	s	BUSHING (P), INSULATING
2pcs	3-703-037-00	s	INSULATOR, TO-220
4pcs	3-718-718-02	o	HEAT SINK (A)
4pcs	7-621-759-65	s	+PSW, 2.6X8
#2pcs	7-682-903-01	s	SCREW +PWH 3X5
C2	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C4	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C6	1-161-494-00	s	CERAMIC 0.022uF 25V
C8	1-161-494-00	s	CERAMIC 0.022uF 25V
C11	1-161-494-00	s	CERAMIC 0.022uF 25V
C13	1-161-494-00	s	CERAMIC 0.022uF 25V
C14	1-161-494-00	s	CERAMIC 0.022uF 25V
C16	1-161-494-00	s	CERAMIC 0.022uF 25V
C18	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C21	1-125-579-11	s	DOUBLE LAYERS 0.1FARAD 5.5V
CP1	1-464-978-11	s	CONVERTER UNIT, DC-DC (CD-86)
D1	8-719-110-17	s	DIODE RD10ES-B2
D2	8-719-911-55	s	DIODE U05G
D3	8-719-911-55	s	DIODE U05G
D4	8-719-911-55	s	DIODE U05G
D5	8-719-911-55	s	DIODE U05G
F1	⚠1-532-781-11	s	FUSE, 3.15A 125V
F2	⚠1-532-701-11	s	FUSE, 2.5A 125V
F3	⚠1-532-781-11	s	FUSE, 3.15A 125V
#F4	⚠1-532-775-11	s	FUSE 0.8A 125V
F5	⚠1-532-778-21	s	FUSE, 1.6A 125V
F6	⚠1-532-778-21	s	FUSE, 1.6A 125V
IC1	8-759-982-10	s	IC RC7809FA
IC2	8-759-982-05	s	IC RC7805FA
IC3	8-759-135-80	s	IC UPC358C
L1	1-410-087-31	s	INDUCTOR 10mH
#L2	1-410-064-11	s	INDUCTOR 2.7mH
Q1	8-729-119-76	s	TRANSISTOR 2SA1115P
Q2	8-729-385-82	s	TRANSISTOR 2SB858-C
Q3	8-729-900-89	s	TRANSISTOR DTC144ES
Q4	8-729-900-65	s	TRANSISTOR DTA144ES
Q5	8-729-900-89	s	TRANSISTOR DTC144ES
Q6	8-729-382-64	s	TRANSISTOR 2SC1826-G
Q7	8-729-900-89	s	TRANSISTOR DTC144ES
R1	1-249-417-11	s	CARBON 1K 5% 1/4W
R2	1-249-417-11	s	CARBON 1K 5% 1/4W
R3	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R4	1-249-408-11	s	CARBON 180 5% 1/4W
R5	1-249-427-11	s	CARBON 6.8K 5% 1/4W
R6	1-249-420-11	s	CARBON 1.8K 5% 1/4W
R7	1-215-444-00	s	METAL 9.1K 1% 1/6W
R8	1-215-443-00	s	METAL 8.2K 1% 1/6W
R9	1-249-417-11	s	CARBON 1K 5% 1/4W
R10	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R11	1-249-417-11	s	CARBON 1K 5% 1/4W
R12	1-249-433-11	s	CARBON 22K 5% 1/4W
R13	1-249-437-11	s	CARBON 47K 5% 1/4W
#R14	1-214-804-11	s	METAL 3.3 1% 1/2W
R15	1-249-405-11	s	CARBON 100 5% 1/4W

(DC-45 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R16	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R17	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R18	1-249-441-11	s	CARBON 100K 5% 1/4W
RV1	1-230-496-11	s	RES, ADJ, METAL 10K

DD-12 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7061-772-A	o	MOUNTED CIRCUIT BOARD, DD-12

This board inclues the DP-101 Board.

Ref. No. or Q'ty	Part No.	SP	Description
#1pc	1-535-699-11	s	CABLE, JUMPER 23P
D1	8-719-911-19	s	DIODE 1SS119
D321	8-719-911-19	s	DIODE 1SS119
IC2	8-759-645-16	s	IC M54516P
IC3	8-759-645-16	s	IC M54516P
Q308	8-729-903-02	s	TRANSISTOR DTA143XS
Q309	8-729-903-02	s	TRANSISTOR DTA143XS
Q310	8-729-903-02	s	TRANSISTOR DTA143XS
Q311	8-729-903-02	s	TRANSISTOR DTA143XS
Q312	8-729-903-02	s	TRANSISTOR DTA143XS
Q313	8-729-903-02	s	TRANSISTOR DTA143XS
Q314	8-729-903-02	s	TRANSISTOR DTA143XS
R366	1-249-402-11	s	CARBON 56 5% 1/4W
R367	1-249-402-11	s	CARBON 56 5% 1/4W
R368	1-249-402-11	s	CARBON 56 5% 1/4W
R369	1-249-402-11	s	CARBON 56 5% 1/4W
R370	1-249-402-11	s	CARBON 56 5% 1/4W
R371	1-249-402-11	s	CARBON 56 5% 1/4W
R372	1-249-402-11	s	CARBON 56 5% 1/4W
S1009	1-516-995-00	s	SWITCH, LEVER SLIDE
S1010	1-552-539-00	s	SWITCH, TACTILE

NOTE:Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

.For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

DI-11(NEW)BOARD

This board is used for serial No. 10341 and higher.

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7061-775-A	o	MOUNTED CIRCUIT BOARD, DI-11
C201	1-124-126-00	s	ELECT 47uF 20% 25V
C202	1-124-126-00	s	ELECT 47uF 20% 25V
C220	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C221	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C227	1-124-126-00	s	ELECT 47uF 20% 25V
C229	1-124-126-00	s	ELECT 47uF 20% 25V
C230	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C235	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C236	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C237	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C243	1-163-127-00	s	CERAMIC, CHIP 270PF 5% 50V
C244	1-163-139-00	s	CERAMIC, CHIP 820PF 5% 50V
C246	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C248	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C249	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C250	1-164-182-11	s	CERAMIC CHIP 3300PF 10% 100V
C252	1-126-157-11	s	ELECT 10uF 20% 16V
C254	1-124-126-00	s	ELECT 47uF 20% 25V
C258	1-163-098-00	s	CERAMIC CHIP 16PF 5% 50V
C260	1-124-638-11	s	ELECT 22uF 20% 10V
C262	1-163-098-00	s	CERAMIC CHIP 16PF 5% 50V
C263	1-162-638-11	s	CERAMIC, CHIP 1uF 16V
C266	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C267	1-162-638-11	s	CERAMIC, CHIP 1uF 16V
C273	1-124-638-11	s	ELECT 22uF 20% 10V
C275	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C277	1-124-638-11	s	ELECT 22uF 20% 10V
C285	1-124-638-11	s	ELECT 22uF 20% 10V
C289	1-126-176-11	s	ELECT 220uF 20% 10V
C290	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C298	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C309	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C319	1-164-161-11	s	CERAMIC, CHIP 0.0022uF 10% 100V
C322	1-124-638-11	s	ELECT 22uF 20% 10V
C323	1-124-638-11	s	ELECT 22uF 20% 10V
C342	1-124-126-00	s	ELECT 47uF 20% 25V
C343	1-124-126-00	s	ELECT 47uF 20% 25V
C401	1-126-157-11	s	ELECT 10uF 20% 16V
C407	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C408	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C409	1-131-349-00	s	TANTALUM 2.2uF 10% 35V
C410	1-126-157-11	s	ELECT 10uF 20% 16V
C413	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C419	1-164-161-11	s	CERAMIC, CHIP 0.0022uF 10% 100V
C422	1-131-374-00	s	TANTALUM 33uF 10% 16V
C426	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C428	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C429	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C430	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C431	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C432	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C433	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C434	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C654	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C655	1-126-103-11	s	ELECT 470uF 20% 16V
C656	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C658	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C660	1-163-110-00	s	CERAMIC, CHIP 51PF 5% 50V
C663	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C664	1-126-103-11	s	ELECT 470uF 20% 16V
C665	1-126-103-11	s	ELECT 470uF 20% 16V
C701	1-124-126-00	s	ELECT 47uF 20% 25V
C702	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C704	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C705	1-131-353-00	s	TANTALUM 10uF 10% 35V
C706	1-124-256-00	s	ELECT 1.5uF 20% 50V
C708	1-131-353-00	s	TANTALUM 10uF 10% 35V
C712	1-126-233-11	s	ELECT 22uF 20% 50V
C713	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C714	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C720	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C724	1-126-233-11	s	ELECT 22uF 20% 50V
C730	1-124-126-00	s	ELECT 47uF 20% 25V
C731	1-163-016-00	s	CERAMIC CHIP 0.0039MF 10% 50V
C732	1-107-077-00	s	MICA 47PF 5% 50V
C751	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C760	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C762	1-164-161-11	s	CERAMIC, CHIP 0.0022uF 10% 100V
C763	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
CN652	1-506-471-11	s	CONNECTOR, 6P, MALE
CV301	1-141-227-00	s	CAP, TRIMMER 20PF
CV302	1-141-227-00	s	CAP, TRIMMER 20PF
CV720	1-141-260-00	s	CAP, TRIMMER 50PF
D301	8-713-300-88	s	DIODE 1T33C-01
D302	8-713-300-88	s	DIODE 1T33C-01
D303	8-713-300-88	s	DIODE 1T33C-01
D308	8-719-940-45	s	DIODE DWA010
D390	8-719-104-34	s	DIODE 1S2835
D401	8-719-940-45	s	DIODE DWA010
D403	8-719-940-45	s	DIODE DWA010
D404	8-719-104-10	s	DIODE 1SS99
D730	8-719-800-76	s	DIODE 1SS226
FL201	1-421-927-21	s	FILTER, NOISE
FL202	1-421-927-21	s	FILTER, NOISE
FL651	1-235-759-11	s	FILTER, LOW-PASS
FL652	1-235-161-00	s	FILTER, BANDPASS 3.58MHz
IC301	8-759-987-17	s	IC CXD1226Q
IC302	8-759-987-18	s	IC CXD1227Q
IC303	8-759-987-19	s	IC CXD1228Q
IC304	8-759-987-20	s	IC CXD1229Q
IC305	8-752-337-41	s	IC CXK1206M
IC306	8-752-337-41	s	IC CXK1206M
IC307	8-752-337-41	s	IC CXK1206M
IC308	8-752-334-55	s	IC CXD1175M
IC309	8-752-334-55	s	IC CXD1175M
IC310	8-752-032-96	s	IC CXA1106M
IC311	8-752-032-96	s	IC CXA1106M
IC312	8-759-926-23	s	IC SN74HC163NS
IC316	8-759-008-52	s	IC TC74HC123F
IC401	8-759-009-07	s	IC MC14053BF
IC402	8-759-100-93	s	IC UPC393G2
IC403	8-759-009-51	s	IC MC14538BF
IC404	8-759-981-65	s	IC LM2903M

NOTE:Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

.For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

(DI-11(NEW)BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
IC405	8-759-925-80	s	IC SN74HC14NS
IC406	8-759-925-90	s	IC SN74HC74NS
IC410	8-759-981-65	s	IC LM2903M
IC701	8-759-987-20	s	IC CXD1229Q
IC720	8-752-325-58	s	IC CXD1158M
IC732	8-759-009-07	s	IC MC14053BF
IC740	8-759-908-17	s	IC TL082CPS
IC760	8-759-009-51	s	IC MC14538BF
IC761	8-759-925-90	s	IC SN74HC74NS
L201	1-410-482-31	s	INDUCTOR 100uH
L202	1-410-482-31	s	INDUCTOR 100uH
L204	1-410-482-31	s	INDUCTOR 100uH
L205	1-410-482-31	s	INDUCTOR 100uH
L206	1-410-482-31	s	INDUCTOR 100uH
L207	1-410-494-11	s	INDUCTOR 1MMH
L208	1-410-494-11	s	INDUCTOR 1MMH
L211	1-410-466-41	s	INDUCTOR 4.7uH
L212	1-410-478-11	s	INDUCTOR 47uH
L214	1-410-478-11	s	INDUCTOR 47uH
L215	1-410-478-11	s	INDUCTOR 47uH
L216	1-410-478-11	s	INDUCTOR 47uH
L223	1-410-478-11	s	INDUCTOR 47uH
L224	1-410-478-11	s	INDUCTOR 47uH
L653	1-410-482-31	s	INDUCTOR 100uH
L654	1-410-482-31	s	INDUCTOR 100uH
L702	1-410-470-11	s	INDUCTOR 10uH
L721	1-410-478-11	s	INDUCTOR 47uH
L750	1-410-478-11	s	INDUCTOR 47uH
Q203	8-729-100-66	s	TRANSISTOR 2SC1623
Q204	8-729-100-66	s	TRANSISTOR 2SC1623
Q205	8-729-100-66	s	TRANSISTOR 2SC1623
Q206	8-729-100-66	s	TRANSISTOR 2SC1623
Q207	8-729-100-66	s	TRANSISTOR 2SC1623
Q208	8-729-100-66	s	TRANSISTOR 2SC1623
Q209	8-729-216-22	s	TRANSISTOR 2SA1162
Q210	8-729-100-66	s	TRANSISTOR 2SC1623
Q212	8-729-100-66	s	TRANSISTOR 2SC1623
Q214	8-729-100-66	s	TRANSISTOR 2SC1623
Q222	8-729-100-66	s	TRANSISTOR 2SC1623
Q224	8-729-100-66	s	TRANSISTOR 2SC1623
Q228	8-729-100-66	s	TRANSISTOR 2SC1623
Q229	8-729-100-66	s	TRANSISTOR 2SC1623
Q401	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q402	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q403	8-729-901-01	s	TRANSISTOR DTC144EK
Q404	8-729-216-22	s	TRANSISTOR 2SA1162
Q405	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q406	8-729-216-22	s	TRANSISTOR 2SA1162
Q629	8-729-901-01	s	TRANSISTOR DTC144EK
Q651	8-729-100-66	s	TRANSISTOR 2SC1623
Q652	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q653	8-729-100-66	s	TRANSISTOR 2SC1623
Q654	8-729-100-66	s	TRANSISTOR 2SC1623
Q655	8-729-100-66	s	TRANSISTOR 2SC1623
Q656	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q657	8-729-100-66	s	TRANSISTOR 2SC1623
Q658	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q659	8-729-100-66	s	TRANSISTOR 2SC1623

(DI-11(NEW)BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
Q731	8-729-100-66	s	TRANSISTOR 2SC1623
R266	1-216-648-11	s	METAL, CHIP 750 0.5% 1/10W
R407	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R409	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R429	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
R440	1-216-066-00	s	METAL, CHIP 5.1K 5% 1/10W
R470	1-216-084-00	s	METAL CHIP 30K 5% 1/10W
R491	1-216-072-00	s	METAL, CHIP 9.1K 5% 1/10W
R494	1-216-691-11	s	METAL, CHIP 47K 0.5% 1/10W
R495	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R498	1-215-394-00	s	METAL 75 1% 1/6W
R656	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R657	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R669	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R670	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R716	1-216-670-11	s	METAL, CHIP 6.2K 0.5% 1/10W
R719	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
RV201	1-228-989-00	s	RES, ADJ, METAL 470
RV202	1-228-990-00	s	RES, ADJ, METAL 1K
RV401	1-228-994-00	s	RES, ADJ, METAL 10K
RV402	1-228-994-00	s	RES, ADJ, METAL 10K
RV651	1-228-989-00	s	RES, ADJ, METAL 470
RV652	1-228-989-00	s	RES, ADJ, METAL 470
RV701	1-228-456-00	s	RES, ADJ, METAL 1K
X301	1-527-722-00	s	CRYSTAL 14.31818MHz
X720	1-567-298-11	s	CRYSTAL 14.31818MHz
X741	1-577-089-11	s	VCO, CRYSTAL 14.318180MHz

NOTE:Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

.For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

DI-11(OLD)BOARD

This board is used for serial No. up to 10340.

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7061-775-A	o	MOUNTED CIRCUIT BOARD, DI-11

This board includes DUS-309 Board.

Ref. No. or Q'ty	Part No.	SP	Description
8pcs	7-682-903-01	s	SCREW +PWH 3X5
C9	1-162-726-11	s	CERAMIC 470PF 1% 50V
C10	1-107-207-00	s	MICA 16PF 5% 500V
C102	1-161-494-00	s	CERAMIC 0.022uF 25V
C220	1-164-232-11	s	CERAMIC CHIP 0.01uF 10% 100V
C221	1-164-232-11	s	CERAMIC CHIP 0.01uF 10% 100V
C230	1-164-232-11	s	CERAMIC CHIP 0.01uF 10% 100V
C235	1-164-232-11	s	CERAMIC CHIP 0.01uF 10% 100V
C236	1-164-232-11	s	CERAMIC CHIP 0.01uF 10% 100V
C237	1-164-232-11	s	CERAMIC CHIP 0.01uF 10% 100V
C243	1-163-127-00	s	CERAMIC, CHIP 270PF 5% 50V
C244	1-163-139-00	s	CERAMIC, CHIP 820PF 5% 50V
C246	1-164-232-11	s	CERAMIC CHIP 0.01uF 10% 100V
C247	1-124-499-11	s	ELECT, NONPOLAR 1uF 20% 50V
C248	1-164-232-11	s	CERAMIC CHIP 0.01uF 10% 100V
C249	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C252	1-126-157-11	s	ELECT 10uF 20% 16V
C258	1-163-098-00	s	CERAMIC CHIP 16PF 5% 50V
C260	1-124-638-11	s	ELECT 22uF 20% 10V
C262	1-163-098-00	s	CERAMIC CHIP 16PF 5% 50V
C263	1-162-638-11	s	CERAMIC, CHIP 1uF 16V
C266	1-164-232-11	s	CERAMIC CHIP 0.01uF 10% 100V
C267	1-162-638-11	s	CERAMIC, CHIP 1uF 16V
C271	1-163-098-00	s	CERAMIC CHIP 16PF 5% 50V
C272	1-163-151-00	s	CERAMIC CHIP 4PF 50V
C273	1-124-638-11	s	ELECT 22uF 20% 10V
C275	1-164-232-11	s	CERAMIC CHIP 0.01uF 10% 100V
C277	1-124-638-11	s	ELECT 22uF 20% 10V
C285	1-124-638-11	s	ELECT 22uF 20% 10V
C289	1-126-176-11	s	ELECT 220uF 20% 10V
C290	1-164-232-11	s	CERAMIC CHIP 0.01uF 10% 100V
C298	1-164-232-11	s	CERAMIC CHIP 0.01uF 10% 100V
C299	1-124-499-11	s	ELECT, NONPOLAR 1uF 20% 50V
C309	1-164-232-11	s	CERAMIC CHIP 0.01uF 10% 100V
C319	1-164-161-11	s	CERAMIC, CHIP 0.0022uF 10% 100V
C322	1-124-638-11	s	ELECT 22uF 20% 10V
C323	1-124-638-11	s	ELECT 22uF 20% 10V
C401	1-126-157-11	s	ELECT 10uF 20% 16V
C402	1-126-157-11	s	ELECT 10uF 20% 16V
C405	1-124-499-11	s	ELECT, NONPOLAR 1uF 20% 50V
C407	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C408	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C409	1-131-361-00	s	TANTALUM 2.2uF 10% 20V
C410	1-126-157-11	s	ELECT 10uF 20% 16V
C413	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C419	1-164-161-11	s	CERAMIC, CHIP 0.0022uF 10% 100V
C422	1-124-242-00	s	ELECT 33uF 20% 25V
C423	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C426	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C428	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C429	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C430	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C431	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C432	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C433	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V

(DI-11(OLD)BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C434	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C654	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C655	1-126-103-11	s	ELECT 470uF 20% 16V
C656	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C658	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C660	1-163-110-00	s	CERAMIC, CHIP 51PF 5% 50V
C663	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C664	1-126-103-11	s	ELECT 470uF 20% 16V
C665	1-126-103-11	s	ELECT 470uF 20% 16V
CN652	1-506-471-11	s	CONNECTOR, 6P, MALE
CV1	1-141-227-00	s	CAP, TRIMMER 20PF
CV301	1-141-227-00	s	CAP, TRIMMER 20PF
CV302	1-141-227-00	s	CAP, TRIMMER 20PF
CV303	1-141-227-00	s	CAP, TRIMMER 20PF
D1	8-719-915-43	s	DIODE, VARICAP FC54M
D2	8-719-915-43	s	DIODE, VARICAP FC54M
D301	8-713-300-88	s	DIODE, 1T33C-01
D302	8-713-300-88	s	DIODE, 1T33C-01
D303	8-713-300-88	s	DIODE, 1T33C-01
D308	8-719-940-45	s	DIODE, DWA010
D390	8-719-104-34	s	DIODE, 1S2835
D401	8-719-940-45	s	DIODE, DWA010
D403	8-719-940-45	s	DIODE, DWA010
FL201	1-421-927-21	s	FILTER, NOISE
FL202	1-421-927-21	s	FILTER, NOISE
FL651	1-235-759-11	s	FILTER, LOW-PASS
FL652	1-235-161-00	s	FILTER, BANDPASS 3.58MHz
IC301	8-759-987-17	s	IC, CXD1226Q
IC302	8-759-987-18	s	IC, CXD1227Q
IC303	8-759-987-19	s	IC, CXD1228Q
IC304	8-759-987-20	s	IC, CXD1229Q
IC305	8-752-332-15	s	IC, CXK1206M
IC306	8-752-332-15	s	IC, CXK1206M
IC307	8-752-332-15	s	IC, CXK1206M
IC308	8-752-329-21	s	IC, CXD1175M
IC309	8-752-329-21	s	IC, CXD1175M
IC310	8-752-032-96	s	IC, CXA1106M
IC311	8-752-032-96	s	IC, CXA1106M
IC312	8-759-926-23	s	IC, SN74HC163NS
IC316	8-759-206-28	s	IC TC74HC123F
IC401	8-759-009-07	s	IC MC14053BF
IC402	8-759-100-93	s	IC UPC393G2
IC403	8-759-009-51	s	IC, MC14538BF
IC404	8-759-981-65	s	IC LM2903M
IC405	8-759-925-80	s	IC, SN74HC14NS
IC406	8-759-925-90	s	IC, SN74HC74NS
IC410	8-759-981-65	s	IC LM2903M
L1	1-410-466-41	s	INDUCTOR 4.7uH
L201	1-410-482-31	s	INDUCTOR 100uH
L202	1-410-482-31	s	INDUCTOR 100uH
L204	1-410-482-31	s	INDUCTOR 100uH
L205	1-410-482-31	s	INDUCTOR 100uH
L206	1-410-482-31	s	INDUCTOR 100uH
L211	1-410-466-41	s	INDUCTOR 4.7uH
L212	1-410-478-11	s	INDUCTOR 47uH
L214	1-410-478-11	s	INDUCTOR 47uH
L215	1-410-478-11	s	INDUCTOR 47uH

NOTE:Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

.For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

(DI-11(OLD)BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
L216	1-410-478-11	s	INDUCTOR 47uH
L223	1-410-478-11	s	INDUCTOR 47uH
L224	1-410-478-11	s	INDUCTOR 47uH
L653	1-410-482-31	s	INDUCTOR 100uH
L654	1-410-482-31	s	INDUCTOR 100uH
Q203	8-729-100-66	s	TRANSISTOR 2SC1623
Q204	8-729-100-66	s	TRANSISTOR 2SC1623
Q205	8-729-100-66	s	TRANSISTOR 2SC1623
Q206	8-729-100-66	s	TRANSISTOR 2SC1623
Q207	8-729-100-66	s	TRANSISTOR 2SC1623
Q208	8-729-100-66	s	TRANSISTOR 2SC1623
Q209	8-729-216-22	s	TRANSISTOR 2SA1162
Q210	8-729-100-66	s	TRANSISTOR 2SC1623
Q212	8-729-100-66	s	TRANSISTOR 2SC1623
Q214	8-729-100-66	s	TRANSISTOR 2SC1623
Q222	8-729-100-66	s	TRANSISTOR 2SC1623
Q224	8-729-100-66	s	TRANSISTOR 2SC1623
Q228	8-729-100-66	s	TRANSISTOR 2SC1623
Q229	8-729-100-66	s	TRANSISTOR 2SC1623
Q401	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q402	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q403	8-729-901-01	s	TRANSISTOR DTC144EK
Q404	8-729-216-22	s	TRANSISTOR 2SA1162
Q405	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q406	8-729-216-22	s	TRANSISTOR 2SA1162
Q409	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q629	8-729-901-01	s	TRANSISTOR DTC144EK
Q651	8-729-100-66	s	TRANSISTOR 2SC1623
Q652	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q653	8-729-100-66	s	TRANSISTOR 2SC1623
Q654	8-729-100-66	s	TRANSISTOR 2SC1623
Q655	8-729-100-66	s	TRANSISTOR 2SC1623
Q656	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q657	8-729-100-66	s	TRANSISTOR 2SC1623
Q658	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q659	8-729-100-66	s	TRANSISTOR 2SC1623
R13	1-249-405-11	s	CARBON 100 5% 1/4W
R429	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
R440	1-216-066-00	s	METAL, CHIP 5.1K 5% 1/10W
R470	1-216-084-00	s	METAL CHIP 30K 5% 1/10W
R491	1-216-072-00	s	METAL, CHIP 9.1K 5% 1/10W
R494	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
R495	1-216-074-00	s	METAL CHIP 11K 10% 1/10W
R656	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R657	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R669	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R670	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
RV201	1-228-989-00	s	RES, ADJ, METAL 470
RV202	1-228-990-00	s	RES, ADJ, METAL 1K
RV401	1-228-994-00	s	RES, ADJ, METAL 10K
RV402	1-228-994-00	s	RES, ADJ, METAL 10K
RV651	1-228-989-00	s	RES, ADJ, METAL 470
RV652	1-228-989-00	s	RES, ADJ, METAL 470
X301	1-527-722-00	s	CRYSTAL 14.31818MHz
X302	1-567-298-11	s	CRYSTAL 14.31818MHz

DP-101 BOARD

All of the component parts on the DP-101 Board are supplied together with when you order DD-12 Board.

Ref. No. or Q'ty	Part No.	SP	Description
#D101	8-719-942-19	s	LED LB402VK
#D102	8-719-942-19	s	LED LB402VK
#D103	8-719-942-19	s	LED LB402VK
#D104	8-719-942-19	s	LED LB402VK

NOTE:Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

.For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

DUS-309 BOARD

This board is used for serial No. up to 10340. All of the component parts on the DUS-309 Board are supplied together with when you order DI-11(OLD) Board.

Ref. No. or Q'ty	Part No.	SP	Description
C1	1-124-589-11	s	ELECT 47uF 20% 16V
C2	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C3	1-124-438-00	s	ELECT 1uF 20% 50V
C4	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C5	1-131-353-00	s	TANTALUM 10uF 10% 35V
C6	1-124-256-00	s	ELECT 1.5uF 20% 50V
C7	1-126-177-11	s	ELECT 100uF 20% 10V
C8	1-131-353-00	s	TANTALUM 10uF 10% 35V
C11	1-162-294-31	s	CERAMIC 0.001uF 10% 50V
C12	1-124-638-11	s	ELECT 22uF 20% 10V
C13	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C101	1-130-478-00	s	MYLAR 0.0039uF 5% 50V
C102	1-161-494-00	s	CERAMIC 0.022uF 25V
C103	1-124-589-11	s	ELECT 47uF 20% 16V
C200	1-161-494-00	s	CERAMIC 0.022uF 25V
C201	1-107-210-00	s	MICA 22PF 5% 500V
C202	1-107-159-00	s	MICA 33PF 5% 500V
C204	1-124-638-11	s	ELECT 22uF 20% 10V
C205	1-124-589-11	s	ELECT 47uF 20% 16V
C300	1-124-589-11	s	ELECT 47uF 20% 16V
C301	1-124-589-11	s	ELECT 47uF 20% 16V
C302	1-161-494-00	s	CERAMIC 0.022uF 25V
C303	1-161-494-00	s	CERAMIC 0.022uF 25V
C400	1-161-494-00	s	CERAMIC 0.022uF 25V
C401	1-130-471-00	s	MYLAR 0.001uF 5% 50V
C402	1-130-475-00	s	MYLAR 0.0022uF 5% 50V
C403	1-161-494-00	s	CERAMIC 0.022uF 25V
CV200	1-141-260-00	s	CAP, TRIMMER 50PF
IC1	8-759-987-20	s	IC, CXD1229Q
IC101	8-759-009-51	s	IC, MC14538BF
IC102	8-759-009-07	s	IC MC14053BF
IC200	8-752-325-58	s	IC, CXD1158M
IC300	8-759-908-17	s	IC TL082CPS
IC400	8-759-009-51	s	IC, MC14538BF
IC401	8-759-925-90	s	IC, SN74HC74NS
L2	1-410-470-11	s	INDUCTOR 10uH
L201	1-410-478-11	s	INDUCTOR 47uH
L300	1-410-478-11	s	INDUCTOR 47uH
Q101	8-729-600-24	s	TRANSISTOR 2SC403SP-51
R3	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R4	1-249-402-11	s	CARBON 56 5% 1/4W
R5	1-249-417-11	s	CARBON 1K 5% 1/4W
R6	1-249-417-11	s	CARBON 1K 5% 1/4W
R7	1-249-403-11	s	CARBON 68 5% 1/4W
R8	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R9	1-247-899-11	s	CARBON 680K 5% 1/4W
R10	1-249-435-11	s	CARBON 33K 5% 1/4W
R11	1-249-435-11	s	CARBON 33K 5% 1/4W
R12	1-249-429-11	s	CARBON 10K 5% 1/4W
R14	1-249-417-11	s	CARBON 1K 5% 1/4W
R15	1-249-435-11	s	CARBON 33K 5% 1/4W
R16	1-215-440-00	s	METAL 6.2K 1% 1/6W
R17	1-247-903-00	s	CARBON 1M 5% 1/4W
R101	1-247-899-11	s	CARBON 680K 5% 1/4W
R102	1-249-431-11	s	CARBON 15K 5% 1/4W
R103	1-249-435-11	s	CARBON 33K 5% 1/4W
R104	1-249-417-11	s	CARBON 1K 5% 1/4W
R201	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R202	1-249-416-11	s	CARBON 820 5% 1/4W
R300	1-249-417-11	s	CARBON 1K 5% 1/4W
R301	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R302	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R303	1-249-417-11	s	CARBON 1K 5% 1/4W
R401	1-249-437-11	s	CARBON 47K 5% 1/4W
R402	1-249-437-11	s	CARBON 47K 5% 1/4W
X200	1-567-298-11	s	CRYSTAL 14.31818MHz
X301	1-577-089-11	s	CRYSTAL 14.31818MHz

FP-84 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7070-624-A	o	MOUNTED CIRCUIT BOARD, FP-84

All of the component parts on the FP-84 Board are supplied together with when you order MD-23 Board.

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-625-649-11	s	PRINTED CIRDUIT BOARD, FP-84 FLEXIBLE
W801	1-562-880-11	s	CONNECTOR, 15P, FEMALE

FP-122 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7070-625-A	o	MOUNTED CIRCUIT BOARD, FP-122

All of the component parts on the FP-122 Board are supplied together with when you order MD-23 Board.

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-625-650-11	s	PRINTED CIRCUIT BOARD, FP-122 FLEXIBLE
W901	1-562-880-11	s	CONNECTOR, 15P, FEMALE

FP-206 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-630-923-11	o	PRINTED CIRCUIT BOARD , FP-206 FLEXBLE

NOTE:Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

.For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

FR-40 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7061-821-A	o	MOUNTED CIRCUIT BOARD, FR-40

This board includes the RP-73 Boards.

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-559-763-11	s	CABLE, FLAT 26P
1pc	3-739-102-01	o	LID (H), UPPER, FR SHIELD CASE
C001	1-135-091-00	s	TANTALUN, CHIP 1uF 10% 16V
C003	1-135-091-00	s	TANTALUN, CHIP 1uF 10% 16V
C005	1-135-091-00	s	TANTALUN, CHIP 1uF 10% 16V
C007	1-135-091-00	s	TANTALUN, CHIP 1uF 10% 16V
C012	1-135-157-21	s	TANTALUM 10uF 10% 6.3V
C031	1-135-157-21	s	TANTALUM 10uF 10% 6.3V
C032	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C033	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C041	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C043	1-135-157-21	s	TANTALUM 10uF 10% 6.3V
C047	1-163-115-00	s	CERAMIC, CHIP 82PF 5% 50V
C052	1-135-156-21	s	TANTALUM 6.8uF 10% 10V
C053	1-135-148-21	s	TANTALUM 1.5uF 10% 16V
C054	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C055	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C056	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
CN001	1-562-629-11	s	CONNECTOR, 19P, FEMALE
CN002	1-565-209-11	s	CONNECTOR, FPC (ZIF) 26P FEMALE
D001	8-719-400-18	s	DIODE MA152WK
IC051	8-759-710-09	s	IC NJM2233AM
L001	1-408-777-00	s	INDUCTOR CHIP 10UH
L031	1-408-777-00	s	INDUCTOR CHIP 10UH
L041	1-408-793-21	s	INDUCTOR CHIP 220UH
L042	1-408-777-00	s	INDUCTOR CHIP 10UH
L051	1-408-785-21	s	INDUCTOR CHIP 47UH
Q001	8-729-202-38	s	TRANSISTOR 2SC3326N
Q002	8-729-202-38	s	TRANSISTOR 2SC3326N
Q003	8-729-202-38	s	TRANSISTOR 2SC3326N
Q004	8-729-202-38	s	TRANSISTOR 2SC3326N
Q005	8-729-901-05	s	TRANSISTOR DTA124EK
Q006	8-729-901-05	s	TRANSISTOR DTA124EK
Q007	8-729-901-01	s	TRANSISTOR DTC144EK
Q008	8-729-901-01	s	TRANSISTOR DTC144EK
Q009	8-729-320-17	s	TRANSISTOR 2SA1122CD
Q031	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q032	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q041	8-729-216-22	s	TRANSISTOR 2SA1162
Q042	8-729-119-76	s	TRANSISTOR 2SA1115P
Q043	8-729-320-17	s	TRANSISTOR 2SA1122CD
R018	1-216-695-11	s	METAL, CHIP 68K 0.5% 1/10W

NOTE:Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

HK-4 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7061-820-A	o	MOUNTED CIRCUIT BOARD, HK-4
1pc	1-409-466-11	s	TRAP 1.5&1.7MHz
1pc	3-531-576-01	s	RIVET
1pc	3-724-107-01	o	RETAINER, PC BOARD
C101	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C106	1-163-127-00	s	CERAMIC, CHIP 270PF 5% 50V
C108	1-163-115-00	s	CERAMIC, CHIP 82PF 5% 50V
C110	1-163-103-00	s	CERAMIC, CHIP 27PF 5% 50V
C111	1-163-241-11	s	CERAMIC, CHIP 39PF 5% 50V
C116	1-135-070-00	s	TANTALUM, CHIP 0.1uF 10% 35V
C118	1-163-090-00	s	CERAMIC, CHIP 7PF 50V
C122	1-102-942-00	s	CERAMIC 5PF 50V
C124	1-163-104-00	s	CERAMIC, CHIP 30PF 5% 50V
C129	1-163-095-00	s	CERAMIC, CHIP 12PF 5% 50V
C135	1-163-090-00	s	CERAMIC, CHIP 7PF 50V
C136	1-163-099-00	s	CERAMIC, CHIP 18PF 5% 50V
C143	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C201	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C204	1-163-127-00	s	CERAMIC, CHIP 270PF 5% 50V
C210	1-163-106-00	s	CERAMIC 36PF 5% 50V
C212	1-135-156-21	s	TANTALUM 6.8uF 10% 10V
C226	1-163-122-00	s	CERAMIC 160PF 5% 50V
C227	1-163-120-00	s	CERAMIC 130PF 5% 50V
C228	1-163-122-00	s	CERAMIC 160PF 5% 50V
C302	1-135-162-21	s	TANTALUM 33uF 10% 6.3V
C303	1-163-095-00	s	CERAMIC, CHIP 12PF 5% 50V
C304	1-163-099-00	s	CERAMIC, CHIP 18PF 5% 50V
C308	1-135-156-21	s	TANTALUM 6.8uF 10% 10V
C313	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C314	1-163-241-11	s	CERAMIC, CHIP 39PF 5% 50V
C316	1-163-241-11	s	CERAMIC, CHIP 39PF 5% 50V
C317	1-163-111-00	s	CERAMIC, CHIP 56PF 5% 50V
#C318	1-164-491-11	s	CERAMIC 300PF 5% 50V
C321	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C323	1-163-012-00	s	CERAMIC CHIP 1800PF 10% 50V
C325	1-135-156-21	s	TANTALUM 6.8uF 10% 10V
C327	1-135-156-21	s	TANTALUM 6.8uF 10% 10V
C329	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C331	1-135-091-00	s	TANTALUN, CHIP 1uF 10% 16V
C332	1-135-155-21	s	TANTAL CHIP 4.7uF 10% 16V
C334	1-135-155-21	s	TANTAL CHIP 4.7uF 10% 16V
C340	1-135-072-21	s	TANTALUM, CHIP 0.22uF 10% 35V
C341	1-135-157-21	s	TANTALUM 10uF 10% 6.3V
C343	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C345	1-163-134-00	s	CERAMIC 510PF 5% 50V
C402	1-124-968-11	s	ELECT 22uF 20% 6.3V
C403	1-163-106-00	s	CERAMIC 36PF 5% 50V
C404	1-163-111-00	s	CERAMIC, CHIP 56PF 5% 50V
C405	1-163-099-00	s	CERAMIC, CHIP 18PF 5% 50V
C407	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C409	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C411	1-163-088-00	s	CERAMIC, CHIP 5PF 50V
C412	1-135-156-21	s	TANTALUM 6.8uF 10% 10V
C414	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C416	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C418	1-163-131-00	s	CERAMIC, CHIP 390PF 5% 50V
#C419	1-164-491-11	s	CERAMIC 300PF 5% 50V
C420	1-135-156-21	s	TANTALUM 6.8uF 10% 10V
C424	1-135-155-21	s	TANTAL CHIP 4.7uF 10% 16V

.For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

(HK-4 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C427	1-135-157-21	s	TANTALUM 10uF 10% 6.3V
C428	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C429	1-135-157-21	s	TANTALUM 10uF 10% 6.3V
C501	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C505	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C509	1-135-156-21	s	TANTALUM 6.8uF 10% 10V
C510	1-135-156-21	s	TANTALUM 6.8uF 10% 10V
C512	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C516	1-135-155-21	s	TANTAL CHIP 4.7uF 10% 16V
C519	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C520	1-163-111-00	s	CERAMIC, CHIP 56PF 5% 50V
C521	1-163-103-00	s	CERAMIC, CHIP 27PF 5% 50V
C526	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C527	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C601	1-135-156-21	s	TANTALUM 6.8uF 10% 10V
C607	1-135-070-00	s	TANTALUM, CHIP 0.1uF 10% 35V
C609	1-135-156-21	s	TANTALUM 6.8uF 10% 10V
C613	1-135-073-00	s	TANTALUM, CHIP 0.33uF 10% 35V
C614	1-163-098-00	s	CERAMIC CHIP 16PF 5% 50V
C620	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C621	1-135-155-21	s	TANTAL CHIP 4.7uF 10% 16V
C622	1-135-156-21	s	TANTALUM 6.8uF 10% 10V
C623	1-135-156-21	s	TANTALUM 6.8uF 10% 10V
C627	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C631	1-135-072-21	s	TANTALUM, CHIP 0.22uF 10% 35V
C632	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C634	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C635	1-164-182-11	s	CERAMIC CHIP 3300PF 10% 100V
C637	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C644	1-163-115-00	s	CERAMIC, CHIP 82PF 5% 50V
C645	1-163-111-00	s	CERAMIC, CHIP 56PF 5% 50V
C646	1-163-119-00	s	CERAMIC, CHIP 120PF 5% 50V
C652	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C659	1-163-111-00	s	CERAMIC, CHIP 56PF 5% 50V
C704	1-135-157-21	s	TANTALUM 10uF 10% 6.3V
C708	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C710	1-135-091-00	s	TANTALUN, CHIP 1uF 10% 16V
C712	1-163-127-00	s	CERAMIC, CHIP 270PF 5% 50V
C713	1-135-097-21	s	TANTALUM, CHIP 15uF 10% 10V
C714	1-135-097-21	s	TANTALUM, CHIP 15uF 10% 10V
C715	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C716	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C717	1-135-156-21	s	TANTALUM 6.8uF 10% 10V
C719	1-135-148-21	s	TANTALUM 1.5uF 10% 16V
C721	1-124-584-00	s	ELECT 100uF 20% 10V
C804	1-135-157-21	s	TANTALUM 10uF 10% 6.3V
C808	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C810	1-135-091-00	s	TANTALUN, CHIP 1uF 10% 16V
C812	1-163-127-00	s	CERAMIC, CHIP 270PF 5% 50V
C814	1-135-097-21	s	TANTALUM, CHIP 15uF 10% 10V
C815	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C816	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C817	1-135-156-21	s	TANTALUM 6.8uF 10% 10V
C819	1-135-148-21	s	TANTALUM 1.5uF 10% 16V
C820	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C821	1-124-584-00	s	ELECT 100uF 20% 10V
C825	1-163-099-00	s	CERAMIC, CHIP 18PF 5% 50V
C851	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C857	1-135-155-21	s	TANTAL CHIP 4.7uF 10% 16V

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Ref. No. or Q'ty	Part No.	SP	Description
C905	1-135-156-21	s	TANTALUM 6.8uF 10% 10V
C907	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
CF601	1-567-306-11	s	RESONATOR, CERAMIC
CF851	1-567-390-11	s	FILTER, CERAMIC 10.7MHz
CN101	1-566-943-11	s	CONNECTOR, BOARD TO BOARD 18P
CN102	1-566-943-11	s	CONNECTOR, BOARD TO BOARD 18P
CN914	1-506-471-11	o	CONNECTOR, 6P, MALE
CV601	1-141-311-11	s	CAR, TRIMMER 20PF
D101	8-719-400-18	s	DIODE MA152WK
D102	8-719-400-18	s	DIODE MA152WK
D105	8-719-800-76	s	DIODE 1SS226
D106	8-719-400-18	s	DIODE MA152WK
D107	8-719-400-18	s	DIODE MA152WK
D108	8-719-400-18	s	DIODE MA152WK
#D109	8-719-911-19	s	DIODE 1SS119
D301	8-719-400-18	s	DIODE MA152WK
D302	8-719-400-18	s	DIODE MA152WK
D401	8-719-400-18	s	DIODE MA152WK
D402	8-719-400-18	s	DIODE MA152WK
D403	8-719-400-18	s	DIODE MA152WK
D404	8-719-400-18	s	DIODE MA152WK
#D405	8-719-911-19	s	DIODE 1SS119
D501	8-719-400-18	s	DIODE MA152WK
D701	8-719-104-34	s	DIODE 1S2835
D702	8-719-400-18	s	DIODE MA152WK
D801	8-719-400-18	s	DIODE MA152WK
D802	8-719-400-18	s	DIODE MA152WK
D803	8-719-104-34	s	DIODE 1S2835
D901	8-719-400-18	s	DIODE MA152WK
DL501	1-415-611-11	s	DELAY LINE 1H x 2
FL301	1-236-370-11	s	FILTER, LOW-PASS
FL401	1-415-647-11	s	DELAY LINE 250nS
IC101	8-759-233-94	s	IC TA8607F
IC102	8-759-925-60	s	IC BA401
IC301	8-752-002-XX	s	IC CX20030
IC401	8-752-054-18	s	IC CXA1047M-T5
IC501	8-752-003-12	s	IC CX20031
IC601	8-752-202-10	s	IC CX22021
IC602	8-752-003-22	s	IC CX20032
IC603	8-759-914-56	s	IC CX23054
IC701	8-752-322-24	s	IC CXL1008M
IC801	8-752-322-24	s	IC CXL1008M
IC851	8-759-710-05	s	IC NJM2238M
IC901	8-759-925-74	s	IC TC74HC04NS
IC902	8-759-925-74	s	IC TC74HC04NS
L101	1-408-974-21	s	INDUCTOR 22UH
L102	1-410-167-41	s	INDUCTOR CHIP 820UH
L103	1-408-792-00	s	INDUCTOR CHIP 180UH
L104	1-408-775-21	s	INDUCTOR CHIP 6.8uH
L105	1-408-770-11	s	INDUCTOR CHIP 2.7UH
L106	1-408-775-21	s	INDUCTOR CHIP 6.8uH
L107	1-408-775-21	s	INDUCTOR CHIP 6.8uH
L108	1-408-780-21	s	INDUCTOR CHIP 18UH
L111	1-408-797-11	s	INDUCTOR CHIP 470UH
L112	1-408-797-11	s	INDUCTOR CHIP 470UH

NOTE:Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

.For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

(HK-4 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
L113	1-408-777-00	s	INDUCTOR CHIP 10UH
L114	1-408-779-31	s	INDUCTOR CHIP 15UH
L115	1-408-780-21	s	INDUCTOR CHIP 18UH
L201	1-407-169-XX	s	INDUCTOR 100UH
L202	1-408-795-21	s	INDUCTOR CHIP 330UH
L203	1-408-784-11	s	INDUCTOR CHIP 39UH
L204	1-408-782-11	s	INDUCTOR CHIP 27UH
L205	1-408-776-00	s	INDUCTOR CHIP 8.2UH
L301	1-408-790-00	s	INDUCTOR CHIP 120UH
L302	1-408-789-21	s	INDUCTOR CHIP 100UH
L303	1-408-780-21	s	INDUCTOR CHIP 18UH
L305	1-408-779-31	s	INDUCTOR CHIP 15UH
L306	1-408-782-11	s	INDUCTOR CHIP 27UH
L307	1-408-779-31	s	INDUCTOR CHIP 15UH
L308	1-408-783-00	s	INDUCTOR CHIP 33UH
L309	1-408-777-00	s	INDUCTOR CHIP 10UH
L310	1-407-169-XX	s	INDUCTOR 100UH
L401	1-408-782-11	s	INDUCTOR CHIP 27UH
L402	1-408-970-21	s	INDUCTOR 10UH
L501	1-408-984-21	s	INDUCTOR 150UH
L502	1-408-785-21	s	INDUCTOR CHIP 47UH
L503	1-408-767-21	s	INDUCTOR CHIP 1.5UH
L504	1-408-767-21	s	INDUCTOR CHIP 1.5UH
L505	1-408-779-31	s	INDUCTOR CHIP 15UH
L601	1-407-169-XX	s	INDUCTOR 100UH
L602	1-408-792-00	s	INDUCTOR CHIP 180UH
L603	1-408-783-00	s	INDUCTOR CHIP 33UH
L604	1-408-789-21	s	INDUCTOR CHIP 100UH
L605	1-408-790-00	s	INDUCTOR CHIP 120UH
L606	1-408-793-21	s	INDUCTOR CHIP 220UH
L701	1-407-169-XX	s	INDUCTOR 100UH
L702	1-408-787-00	s	INDUCTOR CHIP 68UH
L703	1-408-777-00	s	INDUCTOR CHIP 10UH
L704	1-407-169-XX	s	INDUCTOR 100UH
L705	1-407-169-XX	s	INDUCTOR 100UH
L706	1-408-789-21	s	INDUCTOR CHIP 100UH
L801	1-407-169-XX	s	INDUCTOR 100UH
L802	1-408-787-00	s	INDUCTOR CHIP 68UH
L803	1-408-777-00	s	INDUCTOR CHIP 10UH
L804	1-407-169-XX	s	INDUCTOR 100UH
L805	1-408-781-00	s	INDUCTOR CHIP 22UH
L851	1-407-169-XX	s	INDUCTOR 100UH
L852	1-408-777-00	s	INDUCTOR CHIP 10UH
LV501	1-459-547-11	s	COIL, VAR 15UH
Q101	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q102	8-729-901-04	s	TRANSISTOR DTA114EK
Q103	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q104	8-729-901-01	s	TRANSISTOR DTC144EK
Q105	8-729-904-07	s	TRANSISTOR FMG2
Q107	8-729-100-66	s	TRANSISTOR 2SC1623
Q110	8-729-901-01	s	TRANSISTOR DTC144EK
Q111	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q112	8-729-901-01	s	TRANSISTOR DTC144EK
Q113	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q116	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q117	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q118	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q119	8-729-102-07	s	TRANSISTOR 2SC2223-F13

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Ref. No. or Q'ty	Part No.	SP	Description
Q120	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q121	8-729-100-66	s	TRANSISTOR 2SC1623
Q122	8-729-901-01	s	TRANSISTOR DTC144EK
Q123	8-729-901-01	s	TRANSISTOR DTC144EK
Q124	8-729-901-06	s	TRANSISTOR DTA144EK
Q125	8-729-901-01	s	TRANSISTOR DTC144EK
Q126	8-729-100-66	s	TRANSISTOR 2SC1623
Q127	8-729-100-66	s	TRANSISTOR 2SC1623
Q128	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q129	8-729-100-66	s	TRANSISTOR 2SC1623
Q130	8-729-907-26	s	TRANSISTOR IMX1
Q131	8-729-320-17	s	TRANSISTOR 2SA1122CD
Q132	8-729-203-49	s	TRANSISTOR 2SC3327-B
Q181	8-729-907-46	s	TRANSISTOR IMZ1
Q182	8-729-903-10	s	TRANSISTOR FMW1
Q184	8-729-320-17	s	TRANSISTOR 2SA1122CD
Q201	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q202	8-729-202-38	s	TRANSISTOR 2SC3326N
Q203	8-729-202-38	s	TRANSISTOR 2SC3326N
Q204	8-729-904-07	s	TRANSISTOR FMG2
Q206	8-729-122-63	s	TRANSISTOR 2SA1226
Q207	8-729-202-38	s	TRANSISTOR 2SC3326N
Q208	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q209	8-729-201-27	s	TRANSISTOR 2SC2715-Y
Q210	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q211	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q212	8-729-901-01	s	TRANSISTOR DTC144EK
Q213	8-729-901-06	s	TRANSISTOR DTA144EK
Q214	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q215	8-729-902-96	s	TRANSISTOR FMS1
Q217	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q218	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q219	8-729-901-01	s	TRANSISTOR DTC144EK
Q301	8-729-100-66	s	TRANSISTOR 2SC1623
Q302	8-729-100-66	s	TRANSISTOR 2SC1623
Q305	8-729-100-66	s	TRANSISTOR 2SC1623
Q306	8-729-100-66	s	TRANSISTOR 2SC1623
Q307	8-729-100-66	s	TRANSISTOR 2SC1623
Q309	8-729-100-66	s	TRANSISTOR 2SC1623
Q310	8-729-100-66	s	TRANSISTOR 2SC1623
Q311	8-729-100-66	s	TRANSISTOR 2SC1623
Q312	8-729-901-06	s	TRANSISTOR DTA144EK
Q313	8-729-320-17	s	TRANSISTOR 2SA1122CD
Q314	8-729-100-66	s	TRANSISTOR 2SC1623
Q315	8-729-100-66	s	TRANSISTOR 2SC1623
Q316	8-729-901-01	s	TRANSISTOR DTC144EK
Q317	8-729-100-66	s	TRANSISTOR 2SC1623
Q318	8-729-901-06	s	TRANSISTOR DTA144EK
Q319	8-729-100-66	s	TRANSISTOR 2SC1623
Q320	8-729-901-01	s	TRANSISTOR DTC144EK
Q321	8-729-901-01	s	TRANSISTOR DTC144EK
Q322	8-729-320-17	s	TRANSISTOR 2SA1122CD
Q323	8-729-901-01	s	TRANSISTOR DTC144EK
Q324	8-729-901-01	s	TRANSISTOR DTC144EK
Q325	8-729-901-06	s	TRANSISTOR DTA144EK
Q326	8-729-901-06	s	TRANSISTOR DTA144EK
Q328	8-729-100-66	s	TRANSISTOR 2SC1623
Q401	8-729-100-66	s	TRANSISTOR 2SC1623
Q402	8-729-100-66	s	TRANSISTOR 2SC1623

NOTE:Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

.For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

(HK-4 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
Q403	8-729-901-01	s	TRANSISTOR DTC144EK
Q404	8-729-901-01	s	TRANSISTOR DTC144EK
Q405	8-729-901-06	s	TRANSISTOR DTA144EK
Q406	8-729-100-66	s	TRANSISTOR 2SC1623
Q407	8-729-320-17	s	TRANSISTOR 2SA1122CD
Q408	8-729-320-17	s	TRANSISTOR 2SA1122CD
Q409	8-729-100-66	s	TRANSISTOR 2SC1623
Q410	8-729-320-17	s	TRANSISTOR 2SA1122CD
Q411	8-729-901-01	s	TRANSISTOR DTC144EK
Q412	8-729-901-01	s	TRANSISTOR DTC144EK
Q413	8-729-901-01	s	TRANSISTOR DTC144EK
Q414	8-729-100-66	s	TRANSISTOR 2SC1623
Q415	8-729-320-17	s	TRANSISTOR 2SA1122CD
Q416	8-729-320-17	s	TRANSISTOR 2SA1122CD
Q417	8-729-901-01	s	TRANSISTOR DTC144EK
Q418	8-729-100-66	s	TRANSISTOR 2SC1623
Q419	8-729-100-66	s	TRANSISTOR 2SC1623
Q420	8-729-202-38	s	TRANSISTOR 2SC3326N
Q421	8-729-202-38	s	TRANSISTOR 2SC3326N
Q422	8-729-100-66	s	TRANSISTOR 2SC1623
Q423	8-729-100-66	s	TRANSISTOR 2SC1623
Q424	8-729-901-01	s	TRANSISTOR DTC144EK
Q425	8-729-100-66	s	TRANSISTOR 2SC1623
Q426	8-729-100-66	s	TRANSISTOR 2SC1623
Q427	8-729-320-17	s	TRANSISTOR 2SA1122CD
Q428	8-729-320-17	s	TRANSISTOR 2SA1122CD
Q429	8-729-901-01	s	TRANSISTOR DTC144EK
Q430	8-729-901-01	s	TRANSISTOR DTC144EK
Q431	8-729-320-17	s	TRANSISTOR 2SA1122CD
Q501	8-729-901-06	s	TRANSISTOR DTA144EK
Q502	8-729-901-01	s	TRANSISTOR DTC144EK
Q503	8-729-901-00	s	TRANSISTOR DTC124EK
Q601	8-729-901-01	s	TRANSISTOR DTC144EK
Q603	8-729-901-01	s	TRANSISTOR DTC144EK
Q604	8-729-100-66	s	TRANSISTOR 2SC1623
Q605	8-729-100-66	s	TRANSISTOR 2SC1623
Q606	8-729-901-01	s	TRANSISTOR DTC144EK
Q607	8-729-100-66	s	TRANSISTOR 2SC1623
Q608	8-729-320-17	s	TRANSISTOR 2SA1122CD
Q701	8-729-901-01	s	TRANSISTOR DTC144EK
Q702	8-729-216-22	s	TRANSISTOR 2SA1162
Q703	8-729-216-22	s	TRANSISTOR 2SA1162
Q704	8-729-216-22	s	TRANSISTOR 2SA1162
Q705	8-729-320-17	s	TRANSISTOR 2SA1122CD
Q706	8-729-901-01	s	TRANSISTOR DTC144EK
Q707	8-729-901-01	s	TRANSISTOR DTC144EK
Q708	8-729-216-22	s	TRANSISTOR 2SA1162
Q709	8-729-216-22	s	TRANSISTOR 2SA1162
Q710	8-729-320-17	s	TRANSISTOR 2SA1122CD
Q801	8-729-901-01	s	TRANSISTOR DTC144EK
Q802	8-729-320-17	s	TRANSISTOR 2SA1122CD
Q803	8-729-216-22	s	TRANSISTOR 2SA1162
Q804	8-729-216-22	s	TRANSISTOR 2SA1162
Q805	8-729-216-22	s	TRANSISTOR 2SA1162
Q806	8-729-320-17	s	TRANSISTOR 2SA1122CD
Q807	8-729-901-01	s	TRANSISTOR DTC144EK
Q808	8-729-216-22	s	TRANSISTOR 2SA1162
Q809	8-729-216-22	s	TRANSISTOR 2SA1162
Q810	8-729-320-17	s	TRANSISTOR 2SA1122CD

NOTE:Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

(HK-4 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
Q811	8-729-901-01	s	TRANSISTOR DTC144EK
Q851	8-729-100-66	s	TRANSISTOR 2SC1623
Q852	8-729-100-66	s	TRANSISTOR 2SC1623
#Q901	8-729-901-00	s	TRANSISTOR DTC124EK
Q902	8-729-901-01	s	TRANSISTOR DTC144EK
Q903	8-729-104-25	s	TRANSISTOR 2SB804-AV
Q904	8-729-100-66	s	TRANSISTOR 2SC1623
R132	1-249-429-11	s	CARBON 10K 5% 1/4W
#R133	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R142	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
R171	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
R174	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
R196	1-216-050-00	s	METAL CHIP 1.1K 5% 1/10W
R232	1-216-737-11	s	METAL CHIP 1K 1% 1/10W
R233	1-216-602-11	s	METAL CHIP 6.8K 1% 1/10W
R302	1-216-737-11	s	METAL CHIP 1K 1% 1/10W
R303	1-216-518-00	s	METAL CHIP 2.2K 1% 1/10W
R304	1-218-156-11	s	METAL CHIP 8.2K 1% 1/10W
R305	1-216-542-11	s	METAL CHIP 12K 1% 1/10W
R313	1-216-034-00	s	METAL, CHIP 240 5% 1/10W
R321	1-216-032-00	s	METAL, CHIP 200 5% 1/10W
R323	1-218-142-11	s	METAL CHIP 470 1% 1/10W
R329	1-218-150-11	s	METAL CHIP 1.2K 1% 1/10W
R332	1-218-144-11	s	METAL CHIP 560 1% 1/10W
R333	1-216-623-11	s	METAL, CHIP 68 0.5% 1/10W
R340	1-218-150-11	s	METAL CHIP 1.2K 1% 1/10W
R341	1-218-140-11	s	METAL CHIP 390 1% 1/10W
R365	1-218-132-11	s	METAL CHIP 4.7K 1% 1/10W
R401	1-216-737-11	s	METAL CHIP 1K 1% 1/10W
R402	1-216-334-11	s	METAL CHIP 22K 1% 1/10W
R403	1-218-132-11	s	METAL CHIP 4.7K 1% 1/10W
R404	1-216-654-11	s	METAL, CHIP 1.3K 0.5% 1/10W
R409	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R428	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
R429	1-249-433-11	s	CARBON 22K 5% 1/4W
R437	1-218-132-11	s	METAL CHIP 4.7K 1% 1/10W
R438	1-216-737-11	s	METAL CHIP 1K 1% 1/10W
R439	1-216-064-00	s	METAL, CHIP 4.3K 5% 1/10W
R440	1-216-870-11	s	METAL CHIP 180K 1% 1/10W
R441	1-216-064-00	s	METAL, CHIP 4.3K 5% 1/10W
R446	1-218-155-11	s	METAL CHIP 3.9K 1% 1/10W
R447	1-216-333-11	s	METAL CHIP 15K 1% 1/10W
R455	1-218-150-11	s	METAL CHIP 1.2K 1% 1/10W
R466	1-218-142-11	s	METAL CHIP 470 1% 1/10W
R467	1-218-140-11	s	METAL CHIP 390 1% 1/10W
R475	1-216-058-00	s	METAL CHIP 2.4K 5% 1/10W
R483	1-216-082-00	s	METAL CHIP 24K 5% 1/10W
R501	1-216-737-11	s	METAL CHIP 1K 1% 1/10W
R502	1-218-155-11	s	METAL CHIP 3.9K 1% 1/10W
R503	1-216-737-11	s	METAL CHIP 1K 1% 1/10W
R504	1-216-596-11	s	METAL CHIP 2.7K 1% 1/10W
R505	1-218-150-11	s	METAL CHIP 1.2K 1% 1/10W
R510	1-218-132-11	s	METAL CHIP 4.7K 1% 1/10W
R511	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R512	1-218-132-11	s	METAL CHIP 4.7K 1% 1/10W
R513	1-218-144-11	s	METAL CHIP 560 1% 1/10W
R514	1-216-542-11	s	METAL CHIP 12K 1% 1/10W
R516	1-216-518-00	s	METAL CHIP 2.2K 1% 1/10W

.For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

(HK-4 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R517	1-218-140-11	s	METAL CHIP 390 1% 1/10W
R522	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
R530	1-216-631-11	s	METAL, CHIP 150 0.5% 1/10W
R531	1-216-629-11	s	METAL, CHIP 120 0.5% 1/10W
R532	1-216-617-11	s	METAL CHIP 39 0.50% 1/10W
R535	1-216-641-11	s	METAL, CHIP 390 0.5% 1/10W
R536	1-216-633-11	s	METAL, CHIP 180 0.5% 1/10W
R537	1-216-645-11	s	METAL, CHIP 560 0.5% 1/10W
R603	1-216-635-11	s	METAL, CHIP 220 0.5% 1/10W
R605	1-216-723-11	s	METAL CHIP 5.6K 1% 1/10W
R606	1-216-334-11	s	METAL CHIP 22K 1% 1/10W
R607	1-218-132-11	s	METAL CHIP 4.7K 1% 1/10W
R613	1-218-152-11	s	METAL CHIP 1.5K 1% 1/10W
R614	1-218-132-11	s	METAL CHIP 4.7K 1% 1/10W
R615	1-216-542-11	s	METAL CHIP 12K 1% 1/10W
R629	1-218-132-11	s	METAL CHIP 4.7K 1% 1/10W
R630	1-218-155-11	s	METAL CHIP 3.9K 1% 1/10W
R631	1-216-596-11	s	METAL CHIP 2.7K 1% 1/10W
R632	1-218-144-11	s	METAL CHIP 560 1% 1/10W
R633	1-216-518-00	s	METAL CHIP 2.2K 1% 1/10W
R640	1-216-737-11	s	METAL CHIP 1K 1% 1/10W
R641	1-216-737-11	s	METAL CHIP 1K 1% 1/10W
R662	1-216-542-11	s	METAL CHIP 12K 1% 1/10W
R663	1-218-132-11	s	METAL CHIP 4.7K 1% 1/10W
R664	1-218-152-11	s	METAL CHIP 1.5K 1% 1/10W
R704	1-216-737-11	s	METAL CHIP 1K 1% 1/10W
R706	1-216-737-11	s	METAL CHIP 1K 1% 1/10W
R711	1-216-629-11	s	METAL, CHIP 120 0.5% 1/10W
R712	1-216-737-11	s	METAL CHIP 1K 1% 1/10W
R713	1-218-132-11	s	METAL CHIP 4.7K 1% 1/10W
R714	1-216-324-11	s	METAL CHIP 10K 1% 1/10W
R804	1-216-737-11	s	METAL CHIP 1K 1% 1/10W
R806	1-216-737-11	s	METAL CHIP 1K 1% 1/10W
R811	1-216-629-11	s	METAL, CHIP 120 0.5% 1/10W
R812	1-216-737-11	s	METAL CHIP 1K 1% 1/10W
R813	1-218-132-11	s	METAL CHIP 4.7K 1% 1/10W
R814	1-216-324-11	s	METAL CHIP 10K 1% 1/10W
R818	1-216-042-00	s	METAL, CHIP 510 5% 1/10W
R851	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
R856	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
R857	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
R858	1-216-038-00	s	METAL, CHIP 360 5% 1/10W
RV101	1-230-870-11	s	RES, ADJ, METAL 10K
RV201	1-230-868-11	s	RES, ADJ, METAL 2.2K
RV202	1-230-867-11	s	RES, ADJ, METAL 1K
RV301	1-230-868-11	s	RES, ADJ, METAL 2.2K
RV302	1-230-870-11	s	RES, ADJ, METAL 10K
RV303	1-230-870-11	s	RES, ADJ, METAL 10K
RV304	1-230-870-11	s	RES, ADJ, METAL 10K
RV305	1-230-875-21	s	RES, ADJ, METAL 220K
RV401	1-230-873-11	s	RES, ADJ, METAL 47K
RV402	1-230-869-11	s	RES, ADJ, METAL 4.7K
RV403	1-230-868-11	s	RES, ADJ, METAL 2.2K
RV404	1-230-868-11	s	RES, ADJ, METAL 2.2K
RV405	1-230-866-11	s	RES, ADJ, METAL 470
RV501	1-230-870-11	s	RES, ADJ, METAL 10K
RV502	1-230-870-11	s	RES, ADJ, METAL 10K
RV601	1-230-871-11	s	RES, ADJ, METAL 22K
RV602	1-230-870-11	s	RES, ADJ, METAL 10K
RV701	1-230-866-11	s	RES, ADJ, METAL 470
RV702	1-230-866-11	s	RES, ADJ, METAL 470
RV801	1-230-866-11	s	RES, ADJ, METAL 470
RV802	1-230-866-11	s	RES, ADJ, METAL 470
T501	1-235-397-11	s	FILTER, BANDPASS 3.58MHz
T601	1-409-396-11	s	TRAP, CHROMA
T602	1-409-386-11	s	TRAP, CHROMA
X501	1-567-303-11	s	RESONATOR, CERAMIC 10.739MHz
X601	1-567-505-61	s	CRYSTAL 3.579545MHz
X602	1-567-735-11	s	CRYSTAL 5.94755MHz

HP-42 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-629-477-11	o	PRINTED CIRCUIT BOARD, HP-42
C1	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
CN1011	1-507-854-00	s	JACK, PHONE
R1	1-249-406-11	s	CARBON 120 5% 1/4W
R2	1-249-406-11	s	CARBON 120 5% 1/4W
RV1	1-237-703-11	s	RES, VAR CARBON 2K/2K

IG-4 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7070-955-A	o	MOUNTRD CIRCUIT BOARD, IG-4

All of the component parts on the IG-4 Board are supplied togetther with when you order SE-10 Board.

Ref. No. or Q'ty	Part No.	SP	Description
C024	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C025	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C026	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C027	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
CN004	1-566-945-11	s	CONNECTOR, BOARD TO BOARD 18P
CN005	1-566-946-11	s	CONNECTOR, BOARD TO BOARD 22P
CN006	1-566-945-11	s	CONNECTOR, BOARD TO BOARD 18P
CN007	1-566-945-11	s	CONNECTOR, BOARD TO BOARD 18P

NOTE:Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

.For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

KY-162 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7061-779-A	o	MOUNTED CIRCUIT BOARD, KY-162
1pc	3-718-657-01	o	HOLDER, LED
BT1	1-528-229-11	o	BATTERY, LITHIUM CR-2450
C2	1-162-210-31	s	CERAMIC 30PF 5% 50V
C3	1-162-210-31	s	CERAMIC 30PF 5% 50V
C4	1-130-491-00	s	MYLAR 0.047uF 5% 50V
C6	1-126-176-11	s	ELECT 220uF 20% 10V
C7	1-130-491-00	s	MYLAR 0.047uF 5% 50V
C8	1-125-513-11	s	DOUBLE LAYERS 0.047FARAD 5.5V
C9	1-126-163-11	s	ELECT 4.7MF 20% 50V
C10	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C11	1-130-491-00	s	MYLAR 0.047uF 5% 50V
C12	1-162-210-31	s	CERAMIC 30PF 5% 50V
C13	1-162-210-31	s	CERAMIC 30PF 5% 50V
C14	1-130-491-00	s	MYLAR 0.047uF 5% 50V
C16	1-130-491-00	s	MYLAR 0.047uF 5% 50V
C17	1-126-163-11	s	ELECT 4.7MF 20% 50V
C18	1-102-106-00	s	CERAMIC 100PF 10% 50V
D1	8-719-911-19	s	DIODE 1SS119
D10	8-719-911-19	s	DIODE 1SS119
D12	8-719-911-19	s	DIODE 1SS119
D14	8-719-911-19	s	DIODE 1SS119
D15	8-719-911-19	s	DIODE 1SS119
D16	8-719-911-19	s	DIODE 1SS119
D17	8-719-911-19	s	DIODE 1SS119
D18	8-719-911-19	s	DIODE 1SS119
D19	8-719-911-19	s	DIODE 1SS119
D23	8-719-911-19	s	DIODE 1SS119
D24	8-719-911-19	s	DIODE 1SS119
D29	8-719-104-10	s	DIODE 1SS99
D45	8-719-911-19	s	DIODE 1SS119
D46	8-719-911-19	s	DIODE 1SS119
D48	8-719-200-02	s	DIODE 10E2
D49	8-719-911-19	s	DIODE 1SS119
D51	8-719-104-10	s	DIODE 1SS99
D52	8-719-911-19	s	DIODE 1SS119
D54	8-719-911-19	s	DIODE 1SS119
D55	8-719-911-19	s	DIODE 1SS119
D102	8-719-802-11	s	LED TLUG154, GRN
D104	8-719-939-39	s	LED GL5HD8, RED
D108	8-719-939-39	s	LED GL5HD8, RED
D109	8-719-939-39	s	LED GL5HD8, RED
D110	8-719-939-39	s	LED GL5HD8, RED
D111	8-719-939-39	s	LED GL5HD8, RED
D112	8-719-939-39	s	LED GL5HD8, RED
D113	8-719-939-39	s	LED GL5HD8, RED
D114	8-719-820-28	s	LED TLG-256, GRN
D115	8-719-820-28	s	LED TLG-256, GRN
D116	8-719-939-39	s	LED GL5HD8, RED
D117	8-719-802-11	s	LED TLUG154, GRN
IC1	8-759-605-23	s	IC M50747H-601SP
IC4	8-759-645-16	s	IC M54516P
IC5	8-759-600-68	s	IC M54562P
IC6	8-759-982-21	s	IC RC78L05A
IC7	8-759-937-29	s	IC MB88201H-539N
Q2	8-729-900-67	s	TRANSISTOR DTA124XS
Q3	8-729-900-67	s	TRANSISTOR DTA124XS

(KY-162 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
Q4	8-729-900-67	s	TRANSISTOR DTA124XS
Q5	8-729-281-52	s	TRANSISTOR 2SC1815Y
Q6	8-729-281-52	s	TRANSISTOR 2SC1815Y
Q15	8-729-900-89	s	TRANSISTOR DTC144ES
R8	1-249-417-11	s	CARBON 1K 5% 1/4W
R9	1-249-417-11	s	CARBON 1K 5% 1/4W
R10	1-249-417-11	s	CARBON 1K 5% 1/4W
R11	1-249-417-11	s	CARBON 1K 5% 1/4W
R12	1-249-417-11	s	CARBON 1K 5% 1/4W
R13	1-249-417-11	s	CARBON 1K 5% 1/4W
R14	1-249-417-11	s	CARBON 1K 5% 1/4W
R15	1-249-417-11	s	CARBON 1K 5% 1/4W
R16	1-249-436-11	s	CARBON 39K 5% 1/4W
R17	1-249-436-11	s	CARBON 39K 5% 1/4W
R18	1-249-436-11	s	CARBON 39K 5% 1/4W
R19	1-249-436-11	s	CARBON 39K 5% 1/4W
R20	1-249-436-11	s	CARBON 39K 5% 1/4W
R21	1-249-436-11	s	CARBON 39K 5% 1/4W
R22	1-249-436-11	s	CARBON 39K 5% 1/4W
R23	1-249-436-11	s	CARBON 39K 5% 1/4W
R25	1-249-404-00	s	CARBON 82 5% 1/4W
R26	1-249-404-00	s	CARBON 82 5% 1/4W
R27	1-249-404-00	s	CARBON 82 5% 1/4W
R29	1-249-404-00	s	CARBON 82 5% 1/4W
R30	1-249-404-00	s	CARBON 82 5% 1/4W
R31	1-249-404-00	s	CARBON 82 5% 1/4W
R32	1-247-903-00	s	CARBON 1M 5% 1/4W
R33	1-249-422-11	s	CARBON 2.7K 5% 1/4W
R34	1-249-433-11	s	CARBON 22K 5% 1/4W
R35	1-249-433-11	s	CARBON 22K 5% 1/4W
R36	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R37	1-249-422-11	s	CARBON 2.7K 5% 1/4W
R38	1-249-429-11	s	CARBON 10K 5% 1/4W
R39	1-249-437-11	s	CARBON 47K 5% 1/4W
R40	1-249-437-11	s	CARBON 47K 5% 1/4W
R41	1-249-429-11	s	CARBON 10K 5% 1/4W
R44	1-249-413-11	s	CARBON 470 5% 1/4W
R45	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R48	1-249-437-11	s	CARBON 47K 5% 1/4W
R49	1-249-429-11	s	CARBON 10K 5% 1/4W
R50	1-249-417-11	s	CARBON 1K 5% 1/4W
R51	1-249-417-11	s	CARBON 1K 5% 1/4W
R52	1-249-417-11	s	CARBON 1K 5% 1/4W
R53	1-249-417-11	s	CARBON 1K 5% 1/4W
R54	1-249-429-11	s	CARBON 10K 5% 1/4W
R55	1-249-429-11	s	CARBON 10K 5% 1/4W
R56	1-249-429-11	s	CARBON 10K 5% 1/4W
R57	1-249-429-11	s	CARBON 10K 5% 1/4W
R58	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R59	1-249-429-11	s	CARBON 10K 5% 1/4W
R73	1-249-429-11	s	CARBON 10K 5% 1/4W
R75	1-249-433-11	s	CARBON 22K 5% 1/4W
R84	1-249-429-11	s	CARBON 10K 5% 1/4W
R85	1-249-429-11	s	CARBON 10K 5% 1/4W
R86	1-249-417-11	s	CARBON 1K 5% 1/4W
R87	1-249-429-11	s	CARBON 10K 5% 1/4W
R88	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R89	1-249-429-11	s	CARBON 10K 5% 1/4W
R96	1-249-429-11	s	CARBON 10K 5% 1/4W

NOTE:Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

.For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

(KY-162 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R97	1-249-437-11	s	CARBON 47K 5% 1/4W
#R98	1-249-401-11	s	CARBON 47 5% 1/4W
#R99	1-249-401-11	s	CARBON 47 5% 1/4W
R101	1-249-403-11	s	CARBON 68 5% 1/4W
RB1	1-231-410-00	s	RESISTOR BLOCK 10Kx8
RB2	1-231-410-00	s	RESISTOR BLOCK 10Kx8
S1	1-552-539-00	s	SWITCH, TACTILE
S10	1-552-539-00	s	SWITCH, TACTILE
S12	1-552-539-00	s	SWITCH, TACTILE
S14	1-552-539-00	s	SWITCH, TACTILE
S15	1-552-539-00	s	SWITCH, TACTILE
S16	1-552-539-00	s	SWITCH, TACTILE
S17	1-552-539-00	s	SWITCH, TACTILE
S18	1-552-539-00	s	SWITCH, TACTILE
S19	1-552-539-00	s	SWITCH, TACTILE
S23	1-552-539-00	s	SWITCH, TACTILE
S24	1-552-539-00	s	SWITCH, TACTILE
S29	1-552-539-00	s	SWITCH, TACTILE
X1	1-567-869-11	s	RESONATOR, CERAMIC 9.83MHz
X2	1-567-192-11	s	RESONATOR, CERAMIC 4.00MHz

LD-1 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7070-024-A	o	MOUNTED CIRCUIT BOARD, LD-1
1pc	1-613-367-11	o	PRINTED CIRCUIT BOARD, LD-1
D901	8-719-928-54	s	DIODE GL-450S

LP-52 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7061-770-A	o	MOUNTED CIRCUIT BOARD, LP-52
D1	8-719-901-65	s	LED, LT-9200H YELLOW
D2	8-719-820-72	s	LED, TLUY144 YELLOW
D3	8-719-901-65	s	LED, LT-9200H YELLOW
D4	8-719-820-73	s	LED, TLUG144 GREEN
D5	8-719-901-66	s	DIODE LT-9200N
D6	8-719-820-72	s	LED, TLUY144 YELLOW
D7	8-719-901-66	s	DIODE LT-9200N
R1	1-249-404-00	s	CARBON 82 5% 1/4W
R2	1-249-404-00	s	CARBON 82 5% 1/4W
R3	1-249-403-11	s	CARBON 68 5% 1/4W
R4	1-249-404-00	s	CARBON 82 5% 1/4W
R5	1-249-404-00	s	CARBON 82 5% 1/4W
R6	1-249-403-11	s	CARBON 68 5% 1/4W
R7	1-249-404-00	s	CARBON 82 5% 1/4W
R8	1-249-404-00	s	CARBON 82 5% 1/4W
R9	1-249-404-00	s	CARBON 82 5% 1/4W
R10	1-249-404-00	s	CARBON 82 5% 1/4W

NOTE:Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

.For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

MB-19 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7061-824-A	o	MOUNTED CIRCUIT BOARD, MB-19

Thid board inclues PA-27 and PD-19 Boards.

Ref. No. or Q'ty	Part No.	SP	Description
#1pc	4-911-047-01	o	VIBRATION CONTROL (D)
C609	1-124-234-00	s	ELECT 22uF 20% 16V
C652	1-124-234-00	s	ELECT 22uF 20% 16V
C662	1-124-234-00	s	ELECT 22uF 20% 16V
C671	1-124-584-00	s	ELECT 100uF 20% 10V
C672	1-135-091-00	s	TANTALUN, CHIP 1uF 10% 16V
C673	1-124-584-00	s	ELECT 100uF 20% 10V
C674	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C676	1-124-584-00	s	ELECT 100uF 20% 10V
C678	1-124-584-00	s	ELECT 100uF 20% 10V
C679	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C680	1-135-155-21	s	TANTAL CHIP 4.7uF 10% 16V
C681	1-124-584-00	s	ELECT 100uF 20% 10V
C682	1-135-157-21	s	TANTALUM 10uF 10% 6.3V
C683	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
CN601	1-566-943-11	s	CONNECTOR, BOARD TO BOARD 18P
CN602	1-566-944-11	s	CONNECTOR, BOARD TO BOARD 22P
D601	8-719-104-34	s	DIODE 1S2835
D602	8-719-104-34	s	DIODE 1S2835
D603	8-719-104-34	s	DIODE 1S2835
D604	8-719-400-18	s	DIODE MA152WK
D641	8-719-800-76	s	DIODE 1SS226
D642	8-719-800-76	s	DIODE 1SS226
#IC601	8-759-149-34	s	IC UPD75106G-CMX103PCM
IC603	8-759-208-11	s	IC TC4053BFHB
IC651	8-759-603-27	s	IC M5201FP
IC661	8-759-603-27	s	IC M5201FP
IC671	8-741-150-50	s	IC SBX1505-01
L601	1-408-970-21	s	INDUCTOR 10UH
L602	1-408-970-21	s	INDUCTOR 10UH
L603	1-408-970-21	s	INDUCTOR 10UH
L604	1-408-948-00	s	INDUCTOR 220UH
L605	1-408-948-00	s	INDUCTOR 220UH
L641	1-410-393-11	s	INDUCTOR CHIP 100UH
L671	1-408-948-00	s	INDUCTOR 220UH
Q601	8-729-901-06	s	TRANSISTOR DTA144EK
Q602	8-729-901-01	s	TRANSISTOR DTC144EK
Q603	8-729-901-01	s	TRANSISTOR DTC144EK
Q604	8-729-901-01	s	TRANSISTOR DTC144EK
Q605	8-729-901-06	s	TRANSISTOR DTA144EK
Q606	8-729-901-06	s	TRANSISTOR DTA144EK
Q607	8-729-901-01	s	TRANSISTOR DTC144EK
Q608	8-729-901-01	s	TRANSISTOR DTC144EK
Q609	8-729-901-06	s	TRANSISTOR DTA144EK
Q671	8-729-100-66	s	TRANSISTOR 2SC1623
R641	1-216-072-00	s	METAL, CHIP 9.1K 5% 1/10W
R645	1-216-072-00	s	METAL, CHIP 9.1K 5% 1/10W
R673	1-216-052-00	s	METAL, CHIP 1.3K 5% 1/10W
#S641	1-554-371-51	s	SWITCH, TACTILE
#S642	1-554-371-51	s	SWITCH, TACTILE
#S643	1-554-371-51	s	SWITCH, TACTILE
#S644	1-554-371-51	s	SWITCH, TACTILE
#S645	1-554-371-51	s	SWITCH, TACTILE
#S646	1-554-371-51	s	SWITCH, TACTILE
#S647	1-554-371-51	s	SWITCH, TACTILE
S648	1-570-909-21	s	SWITCH, PUSH
#S649	1-554-371-51	s	SWITCH, TACTILE
T603	1-235-398-11	s	FILTER, BANDPASS 1.5MHz
T651	1-235-900-11	s	FILTER, LOW-PASS
T661	1-235-900-11	s	FILTER, LOW-PASS
X601	1-567-121-00	s	CRYSTAL 4.194304MHz

MC-28 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-622-222-11	o	PRINTED CIRCUIT BOARD, MC-28
C1	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C2	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
CN1009	1-507-797-21	s	JACK, LARGE TYPE 2P

NOTE:Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

.For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

MD-23 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7061-819-A	o	MOUNTED CIRCUIT BOARD, MD-23
This board includes FP-84 and FP-122 Boards.			
C801	1-124-465-00	s	ELECT 0.47uF 20% 50V
C802	1-124-464-11	s	ELECT 0.22MF 20% 50V
C804	1-126-160-11	s	ELECT 1uF 20% 50V
C806	1-126-151-11	s	ELECT, NONPOLAR 4.7uF 20% 16V
C808	1-126-162-11	s	ELECT 3.3uF 20% 50V
#C809	1-124-584-00	s	ELECT 100uF 20% 10V
C810	1-126-096-11	s	ELECT 10uF 20% 35V
C811	1-126-096-11	s	ELECT 10uF 20% 35V
C812	1-126-096-11	s	ELECT 10uF 20% 35V
C813	1-126-160-11	s	ELECT 1uF 20% 50V
C814	1-126-160-11	s	ELECT 1uF 20% 50V
C815	1-126-160-11	s	ELECT 1uF 20% 50V
C816	1-124-229-00	s	ELECT 33uF 20% 10V
C817	1-124-229-00	s	ELECT 33uF 20% 10V
C818	1-124-229-00	s	ELECT 33uF 20% 10V
C821	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C822	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C825	1-126-162-11	s	ELECT 3.3uF 20% 50V
C835	1-126-501-11	s	ELECT 0.15uF 20% 50V
C836	1-164-157-11	s	CERAMIC 0.068uF 10% 25V
C837	1-124-464-11	s	ELECT 0.22MF 20% 50V
C838	1-124-589-11	s	ELECT 47uF 20% 16V
C839	1-126-529-11	s	ELECT 0.47uF 20% 50V
C840	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C841	1-124-589-11	s	ELECT 47uF 20% 16V
C901	1-124-234-00	s	ELECT 22uF 20% 16V
C902	1-124-234-00	s	ELECT 22uF 20% 16V
C903	1-124-234-00	s	ELECT 22uF 20% 16V
C904	1-124-234-00	s	ELECT 22uF 20% 16V
C905	1-124-257-00	s	ELECT 2.2uF 20% 50V
C906	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C908	1-126-096-11	s	ELECT 10uF 20% 35V
C909	1-163-077-00	s	CERAMIC 0.1uF 10% 25V
C910	1-130-491-00	s	MYLAR 0.047uF 5% 50V
C911	1-130-491-00	s	MYLAR 0.047uF 5% 50V
C912	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C913	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C914	1-124-589-11	s	ELECT 47uF 20% 16V
C915	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C916	1-126-530-11	s	ELECT 22uF 20% 10V
C917	1-126-530-11	s	ELECT 22uF 20% 10V
C918	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C919	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C950	1-164-157-11	s	CERAMIC 0.068uF 10% 25V
CN807	1-566-527-11	s	CONNECTOR, FPC (ZIF) 11P
CN808	1-566-531-11	s	CONNECTOR, FPC (ZIF) 15P
CN809	1-566-945-11	s	CONNECTOR, BOARD TO BOARD 18P
CN810	1-566-946-11	s	CONNECTOR, BOARD TO BOARD 22P
CN811	1-566-367-11	o	CONNECTOR, EL-BOW 18P, FEMALE
CN812	1-566-942-11	s	CONNECTOR, EL-BOW 30P, FEMALE
CN814	1-566-367-11	o	CONNECTOR, EL-BOW 18P, FEMALE
D803	8-719-200-27	s	DIODE E10DS2
D810	8-719-400-18	s	DIODE MA152WK
D811	8-719-200-27	s	DIODE E10DS2
D901	8-719-400-18	s	DIODE MA152WK

NOTE:Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

(MD-23 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
D902	8-719-400-18	s	DIODE MA152WK
D903	8-719-400-18	s	DIODE MA152WK
D904	8-719-800-76	s	DIODE 1SS226
D905	8-719-400-18	s	DIODE MA152WK
IC801	8-752-037-08	s	IC CXA1109M
IC802	8-759-802-79	s	IC LB1616M
IC804	8-759-981-82	s	IC RC3414M
IC805	8-759-100-93	s	IC UPC393G2
IC806	8-759-207-00	s	IC A7733F
IC807	8-759-107-68	s	IC CX20115A
IC808	8-759-700-62	s	IC NJM4562D
IC809	8-759-100-94	s	IC UPC358G2
IC901	8-759-207-50	s	IC TA7745F
IC902	8-759-100-95	s	IC UPC324G2
IC903	8-759-925-66	s	IC BA6303F
IC904	8-759-208-15	s	IC TC4066BFHB
PS801	1-532-685-00	s	LINK, IC 0.6A
Q806	8-729-111-14	s	TRANSISTOR 2SA1385-Z-L
Q807	8-729-901-06	s	TRANSISTOR DTA144EK
Q809	8-729-111-95	s	TRANSISTOR 2SC3518-ZL
Q810	8-729-805-25	s	TRANSISTOR 2SB1121-S
Q811	8-729-805-25	s	TRANSISTOR 2SB1121-S
Q812	8-729-111-14	s	TRANSISTOR 2SA1385-Z-L
Q813	8-729-100-66	s	TRANSISTOR 2SC1623
Q820	8-729-111-95	s	TRANSISTOR 2SC3518-ZL
Q821	8-729-100-66	s	TRANSISTOR 2SC1623
Q880	8-729-100-66	s	TRANSISTOR 2SC1623
Q901	8-729-920-82	s	TRANSISTOR 2SB1188-QR
Q902	8-729-920-82	s	TRANSISTOR 2SB1188-QR
Q903	8-729-920-82	s	TRANSISTOR 2SB1188-QR
Q904	8-729-901-06	s	TRANSISTOR DTA144EK
Q905	8-729-901-06	s	TRANSISTOR DTA144EK
Q906	8-729-901-01	s	TRANSISTOR DTC144EK
Q907	8-729-901-01	s	TRANSISTOR DTC144EK
Q908	8-729-901-01	s	TRANSISTOR DTC144EK
Q909	8-729-901-06	s	TRANSISTOR DTA144EK
Q950	8-729-903-97	s	TRANSISTOR FMS1FE
R832	1-216-304-11	s	METAL CHIP 3.3 5% 1/10W
R833	1-216-304-11	s	METAL CHIP 3.3 5% 1/10W
R834	1-216-304-11	s	METAL CHIP 3.3 5% 1/10W
R890	1-216-681-11	s	METAL, CHIP 18K 0.5% 1/10W
R891	1-216-681-11	s	METAL, CHIP 18K 0.5% 1/10W
R923	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
R953	1-214-972-00	s	METAL CHIP 0.22 1% 1/4W
RV801	1-230-520-11	s	RES, ADJ, METAL 1K
RV802	1-230-523-11	s	RES, ADJ, METAL 10K
RV803	1-230-527-11	s	RES, ADJ, METAL 100K
RV901	1-230-529-11	s	RES, ADJ, METAL 470K
THP801	1-202-854-00	s	THERMISTOR, POSITIVE

.For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

MS-4 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7090-029-A	s	MOUNTED CIRCUIT BOARD, MS-4

MT-57 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7061-773-A	o	MOUNTED CIRCUIT BOARD, MT-57
2pcs	1-520-506-11	s	METER, AUDIO LEVEL
2pcs	3-738-923-01	o	HOLDER, LED
D1	8-719-820-27	s	LED TLY-256, YEL
D2	8-719-820-27	s	LED TLY-256, YEL
D3	8-719-820-27	s	LED TLY-256, YEL
D4	8-719-820-27	s	LED TLY-256, YEL
R1	1-249-411-11	s	CARBON 330 5% 1/4W
R2	1-249-411-11	s	CARBON 330 5% 1/4W

PA-27 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7061-826-A	o	MOUNTED CIRCUIT BOARD, PA-27

All of the component parts on the PA-27 Board are supplied together with when you order MB-19 Board.

C001	1-163-012-00	s	CERAMIC CHIP 1800PF 10% 50V
C002	1-124-584-00	s	ELECT 100uF 20% 10V
C003	1-126-154-11	s	ELECT 47uF 20% 6.3V
C004	1-126-154-11	s	ELECT 47uF 20% 6.3V
C005	1-130-490-11	s	MYLAR 0.039uF 5% 50V
C007	1-130-479-00	s	MYLAR 0.0047uF 5% 50V
C008	1-126-154-11	s	ELECT 47uF 20% 6.3V
C010	1-126-154-11	s	ELECT 47uF 20% 6.3V
C011	1-130-469-00	s	FILM 680PF 5% 50V
C012	1-130-482-00	s	MYLAR 0.0082uF 5% 50V
C013	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C014	1-135-156-21	s	TANTALUM 6.8uF 10% 10V
C015	1-135-072-21	s	TANTALUM, CHIP 0.22uF 10% 35V
C016	1-126-153-11	s	ELECT 22uF 20% 6.3V
C018	1-126-153-11	s	ELECT 22uF 20% 6.3V
C019	1-126-153-11	s	ELECT 22uF 20% 6.3V
C031	1-124-584-00	s	ELECT 100uF 20% 10V
C032	1-124-584-00	s	ELECT 100uF 20% 10V
C034	1-126-154-11	s	ELECT 47uF 20% 6.3V
C035	1-126-154-11	s	ELECT 47uF 20% 6.3V
C037	1-126-154-11	s	ELECT 47uF 20% 6.3V
C038	1-135-156-21	s	TANTALUM 6.8uF 10% 10V
C039	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C040	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C041	1-109-814-11	s	MICA CHIP 220PF 5% 100V
C042	1-126-154-11	s	ELECT 47uF 20% 6.3V
C043	1-126-153-11	s	ELECT 22uF 20% 6.3V
C044	1-126-154-11	s	ELECT 47uF 20% 6.3V
C051	1-163-012-00	s	CERAMIC CHIP 1800PF 10% 50V
C052	1-124-584-00	s	ELECT 100uF 20% 10V
C053	1-126-154-11	s	ELECT 47uF 20% 6.3V
C054	1-126-154-11	s	ELECT 47uF 20% 6.3V
C055	1-130-490-11	s	MYLAR 0.039uF 5% 50V
C057	1-130-479-00	s	MYLAR 0.0047uF 5% 50V
C058	1-126-154-11	s	ELECT 47uF 20% 6.3V
C060	1-126-154-11	s	ELECT 47uF 20% 6.3V
C061	1-130-469-00	s	FILM 680PF 5% 50V
C062	1-130-482-00	s	MYLAR 0.0082uF 5% 50V
C063	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C064	1-135-156-21	s	TANTALUM 6.8uF 10% 10V
C065	1-135-072-21	s	TANTALUM, CHIP 0.22uF 10% 35V
C066	1-126-153-11	s	ELECT 22uF 20% 6.3V
C068	1-126-153-11	s	ELECT 22uF 20% 6.3V
C069	1-126-153-11	s	ELECT 22uF 20% 6.3V
CN001	1-563-314-11	s	CONNECTOR, BOARD TO BOARD 20P
D031	8-719-104-34	s	DIODE 1S2835
D032	8-719-104-34	s	DIODE 1S2835
D033	8-719-104-34	s	DIODE 1S2835
IC001	8-752-009-90	s	IC CX20099
IC002	8-759-981-92	s	IC RC4558M
IC003	8-759-981-92	s	IC RC4558M
IC004	8-752-322-57	s	IC CXD1077M
IC004	8-752-322-57	s	IC CXD1077M

NOTE:Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

.For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

(PA-27 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
IC005	8-759-908-15	s	IC TL431CLP
L001	1-408-793-21	s	INDUCTOR CHIP 220UH
Q001	8-729-202-38	s	TRANSISTOR 2SC3326N
Q002	8-729-202-38	s	TRANSISTOR 2SC3326N
Q031	8-729-207-70	s	TRANSISTOR RN2404
Q031	8-729-805-69	s	TRANSISTOR 2SA1341
Q031	8-729-901-06	s	TRANSISTOR DTA144EK
Q032	8-729-207-70	s	TRANSISTOR RN2404
Q032	8-729-805-69	s	TRANSISTOR 2SA1341
Q032	8-729-901-06	s	TRANSISTOR DTA144EK
Q033	8-729-207-70	s	TRANSISTOR RN2404
Q033	8-729-805-69	s	TRANSISTOR 2SA1341
Q033	8-729-901-06	s	TRANSISTOR DTA144EK
Q034	8-729-216-22	s	TRANSISTOR 2SA1162
Q035	8-729-216-22	s	TRANSISTOR 2SA1162
Q051	8-729-202-38	s	TRANSISTOR 2SC3326N
Q052	8-729-202-38	s	TRANSISTOR 2SC3326N
R002	1-216-078-00	s	METAL CHIP 16K 5% 1/10W
R003	1-216-072-00	s	METAL, CHIP 9.1K 5% 1/10W
R012	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R016	1-216-060-00	s	METAL CHIP 3K 5% 1/10W
R017	1-216-058-00	s	METAL CHIP 2.4K 5% 1/10W
R018	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
R032	1-216-700-11	s	METAL CHIP 470K 1% 1/10W
R033	1-216-022-00	s	METAL, CHIP 75 5% 1/10W
R036	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R037	1-216-661-11	s	METAL, CHIP 2.7K 0.5% 1/10W
R039	1-215-401-11	s	METAL 150 1% 1/6W
R052	1-216-078-00	s	METAL CHIP 16K 5% 1/10W
R053	1-216-072-00	s	METAL, CHIP 9.1K 5% 1/10W
R062	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R066	1-216-060-00	s	METAL CHIP 3K 5% 1/10W
R067	1-216-058-00	s	METAL CHIP 2.4K 5% 1/10W
R068	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
RV001	1-230-524-11	s	RES, ADJ, METAL 22K
RV002	1-230-521-11	s	RES, ADJ, METAL 2.2K
RV031	1-230-521-11	s	RES, ADJ, METAL 2.2K
RV032	1-230-529-11	s	RES, ADJ, METAL 470K
RV051	1-230-524-11	s	RES, ADJ, METAL 22K
RV052	1-230-521-11	s	RES, ADJ, METAL 2.2K

NOTE:Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

PD-19 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7061-825-A	o	MOUNTED CIRCUIT BOARD, PD-19

All of the component parts on the PD-19 Board are supplied together with when you order MB-19 Board.

Ref. No. or Q'ty	Part No.	SP	Description
C853	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C856	1-135-156-21	s	TANTALUM 6.8uF 10% 10V
C858	1-135-145-11	s	TANTALUM, CHIP 0.47uF 10% 35V
C859	1-135-180-21	s	TANTALUM 33uF 10% 10V
C860	1-135-156-21	s	TANTALUM 6.8uF 10% 10V
#C870	1-163-115-00	s	CERAMIC, CHIP 82PF 5% 50V
C872	1-135-156-21	s	TANTALUM 6.8uF 10% 10V
#C873	1-135-157-21	s	TANTALUM 10uF 10% 6.3V
C875	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C876	1-163-005-11	s	CERAMIC 470PF 10% 50V
C878	1-135-156-21	s	TANTALUM 6.8uF 10% 10V
C880	1-135-156-21	s	TANTALUM 6.8uF 10% 10V
C889	1-135-156-21	s	TANTALUM 6.8uF 10% 10V
CN851	1-565-107-21	o	CONNECTOR, ON BOARD (2MM) 35P
CN852	1-565-107-21	o	CONNECTOR, ON BOARD (2MM) 35P
CN853	1-506-777-11	s	CONNECTOR, BOARD TO BOARD 20P
D851	8-719-104-34	s	DIODE 1S2835
D852	8-719-400-18	s	DIODE MA152WK
D853	8-719-400-18	s	DIODE MA152WK
IC851	8-752-324-45	s	IC CXD1066Q-Z
IC852	8-759-929-17	s	IC CXD1051M
IC853	8-752-010-30	s	IC CX20103
IC854	8-752-010-20	s	IC CX20102
IC855	8-752-331-00	s	IC CXK5864BM-12L
IC856	8-759-948-61	s	IC CX23011-Z
IC857	8-759-911-19	s	IC CX23012
IC858	8-759-972-12	s	IC CF77305FT
IC859	8-759-809-68	s	IC CXP5024H-079Q
IC860	8-759-972-13	s	IC CF77309FR
L851	1-410-393-11	s	INDUCTOR CHIP 100UH
L852	1-410-393-11	s	INDUCTOR CHIP 100UH
L853	1-410-393-11	s	INDUCTOR CHIP 100UH
L855	1-410-393-11	s	INDUCTOR CHIP 100UH
L856	1-410-393-11	s	INDUCTOR CHIP 100UH
L857	1-410-393-11	s	INDUCTOR CHIP 100UH
L858	1-410-393-11	s	INDUCTOR CHIP 100UH
L859	1-410-393-11	s	INDUCTOR CHIP 100UH
L860	1-410-393-11	s	INDUCTOR CHIP 100UH
L861	1-410-393-11	s	INDUCTOR CHIP 100UH
L862	1-410-393-11	s	INDUCTOR CHIP 100UH
Q851	8-729-102-06	s	TRANSISTOR 2SC2223
Q851	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q851	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q852	8-729-122-63	s	TRANSISTOR 2SA1226
Q852	8-729-122-63	s	TRANSISTOR 2SA1226
Q853	8-729-102-06	s	TRANSISTOR 2SC2223
Q853	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q853	8-729-102-07	s	TRANSISTOR 2SC2223-F13
RV851	1-230-869-11	s	RES, ADJ, METAL 4.7K
RV854	1-230-868-11	s	RES, ADJ, METAL 2.2K
X851	1-567-669-91	s	RESONATOR, LITHIUM TANTALATE
X852	1-567-346-11	s	RESONATOR, CERAMIC

.For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

PTC-32 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-569-193-11	o	CONTACT, FEMALE
1pc	1-622-638-11	o	PRINTED CIRCUIT BOARD, PTC-32
C1	1-124-234-00	s	ELECT 22uF 20% 16V
IC1	8-719-939-50	s	PHOTOINTERRUPTER GP-1L52
IC2	8-719-939-50	s	PHOTOINTERRUPTER GP-1L52
IC3	8-719-940-86	s	PHOTOINTERRUPTER GP-1L53
IC4	8-719-939-50	s	PHOTOINTERRUPTER GP-1L52
IC5	8-759-133-90	s	IC UPC339C

RM-66 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-629-473-11	o	PRINTED CIRCUIT BOARD, RM-66
CN101	1-563-890-21	s	CONNECTOR, D-SUB 9P, FEMALE

RP-73(LP)BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7061-827-A	o	MOUNTED CIRCUIT BOARD, RP-73 (LP)

All of the component parts on the RP-73(LP) Board are supplied together with when you order FR-40 Board.

Ref. No. or Q'ty	Part No.	SP	Description
C001	1-162-974-11	s	CERAMIC 0.01uF 50V
C002	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C003	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C005	1-164-330-21	s	CERAMIC 0.22uF 5% 16V
C006	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C007	1-163-077-00	s	CERAMIC 0.1uF 10% 25V
C008	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C009	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C010	1-163-077-00	s	CERAMIC 0.1uF 10% 25V
C011	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C012	1-164-330-21	s	CERAMIC 0.22uF 5% 16V
C013	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C015	1-162-974-11	s	CERAMIC 0.01uF 50V
C016	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C017	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C020	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C021	1-162-974-11	s	CERAMIC 0.01uF 50V
C022	1-135-091-00	s	TANTALUN, CHIP 1uF 10% 16V
C023	1-135-157-21	s	TANTALUM 10uF 10% 6.3V
C024	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C025	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C027	1-135-091-00	s	TANTALUN, CHIP 1uF 10% 16V
C028	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C029	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C030	1-162-974-11	s	CERAMIC 0.01uF 50V
C031	1-164-218-11	s	CERAMIC 180PF 50V
C032	1-162-918-11	s	CERAMIC, CHIP 18PF 5% 50V
C033	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C034	1-162-912-11	s	CERAMIC 7PF 50V
C035	1-162-974-11	s	CERAMIC 0.01uF 50V
C036	1-164-218-11	s	CERAMIC 180PF 50V
C037	1-162-918-11	s	CERAMIC, CHIP 18PF 5% 50V
C038	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C039	1-162-912-11	s	CERAMIC 7PF 50V
C040	1-162-913-11	s	CERAMIC 8PF 50V
C041	1-162-913-11	s	CERAMIC 8PF 50V
C042	1-135-157-21	s	TANTALUM 10uF 10% 6.3V
C043	1-135-157-21	s	TANTALUM 10uF 10% 6.3V
C044	1-162-974-11	s	CERAMIC 0.01uF 50V
D001	8-719-801-41	s	DIODE 1SS196
D002	8-719-801-41	s	DIODE 1SS196
IC001	8-752-033-00	s	IC CXA1234AR
L001	1-410-385-11	s	INDUCTOR, CHIP 22uH
L002	1-410-656-11	s	INDUCTOR CHIP 150UH
L004	1-410-393-11	s	INDUCTOR CHIP 100UH
L005	1-410-381-11	s	INDUCTOR CHIP 10UH
L007	1-410-393-11	s	INDUCTOR CHIP 100UH
L008	1-410-384-31	s	INDUCTOR CHIP 18UH
L009	1-410-384-31	s	INDUCTOR CHIP 18UH
Q002	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q003	8-729-102-07	s	TRANSISTOR 2SC2223-F13
R005	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W

NOTE:Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

.For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

(RP-73(LP)BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R007	1-216-834-11	s	METAL, CHIP 12K 5% 1/16W
R008	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R014	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W
R026	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R027	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R028	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R029	1-216-812-11	s	METAL, CHIP 180 5% 1/16W
R030	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R031	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R032	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R033	1-216-812-11	s	METAL, CHIP 180 5% 1/16W
RV001	1-230-871-11	s	RES, ADJ, METAL 22K
RV002	1-230-871-11	s	RES, ADJ, METAL 22K
RV003	1-230-869-11	s	RES, ADJ, METAL 4.7K
RV004	1-230-869-11	s	RES, ADJ, METAL 4.7K

RP-73(SP)BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7061-822-A	o	MOUNTED CIRCUIT BOARD, RP-73 (SP)

All of the component parts on the RP-73(SP) Board are supplied togerther with when you order FR-40 Board.

Ref. No. or Q'ty	Part No.	SP	Description
C001	1-162-974-11	s	CERAMIC 0.01uF 50V
C002	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C003	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C005	1-164-330-21	s	CERAMIC 0.22uF 5% 16V
C006	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C007	1-163-077-00	s	CERAMIC 0.1uF 10% 25V
C008	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C009	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C010	1-163-077-00	s	CERAMIC 0.1uF 10% 25V
C011	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C012	1-164-330-21	s	CERAMIC 0.22uF 5% 16V
C013	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C015	1-162-974-11	s	CERAMIC 0.01uF 50V
C016	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C017	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C020	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C021	1-162-974-11	s	CERAMIC 0.01uF 50V
C022	1-135-091-00	s	TANTALUN, CHIP 1uF 10% 16V
C023	1-135-157-21	s	TANTALUM 10uF 10% 6.3V
C024	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C025	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C027	1-135-091-00	s	TANTALUN, CHIP 1uF 10% 16V
C028	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C029	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C030	1-162-974-11	s	CERAMIC 0.01uF 50V
C031	1-164-218-11	s	CERAMIC 180PF 50V
C032	1-162-918-11	s	CERAMIC, CHIP 18PF 5% 50V
C033	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C034	1-162-912-11	s	CERAMIC 7PF 50V
C035	1-162-974-11	s	CERAMIC 0.01uF 50V
C036	1-164-218-11	s	CERAMIC 180PF 50V
C037	1-162-918-11	s	CERAMIC, CHIP 18PF 5% 50V
C038	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C039	1-162-912-11	s	CERAMIC 7PF 50V
C040	1-162-913-11	s	CERAMIC 8PF 50V
C041	1-162-913-11	s	CERAMIC 8PF 50V
C042	1-135-157-21	s	TANTALUM 10uF 10% 6.3V
C043	1-135-157-21	s	TANTALUM 10uF 10% 6.3V
C044	1-162-974-11	s	CERAMIC 0.01uF 50V
D001	8-719-801-41	s	DIODE 1SS196
D002	8-719-801-41	s	DIODE 1SS196
IC001	8-752-033-00	s	IC CXA1234AR
L001	1-410-385-11	s	INDUCTOR, CHIP 22uH
L002	1-410-656-11	s	INDUCTOR CHIP 150UH
L004	1-410-393-11	s	INDUCTOR CHIP 100UH
L005	1-410-381-11	s	INDUCTOR CHIP 10UH
L007	1-410-393-11	s	INDUCTOR CHIP 100UH
L008	1-410-384-31	s	INDUCTOR CHIP 18UH
L009	1-410-384-31	s	INDUCTOR CHIP 18UH
Q002	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q003	8-729-102-07	s	TRANSISTOR 2SC2223-F13
R005	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W

NOTE:Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

.For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

(RP-73(SP)BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R007	1-216-836-11	s	METAL, CHIP 18K 5% 1/16W
R008	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R014	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W
R026	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R027	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R028	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R029	1-216-812-11	s	METAL, CHIP 180 5% 1/16W
R030	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R031	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R032	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R033	1-216-812-11	s	METAL, CHIP 180 5% 1/16W
RV001	1-230-871-11	s	RES, ADJ, METAL 22K
RV002	1-230-871-11	s	RES, ADJ, METAL 22K
RV003	1-230-869-11	s	RES, ADJ, METAL 4.7K
RV004	1-230-869-11	s	RES, ADJ, METAL 4.7K

RS-31 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7061-818-A	o	MOUNTED CIRCUIT BOARD, RS-31
1pc	1-559-762-11	o	CABLE, FLAT 22P
1pc	3-712-410-01	s	HOLDER, RS
CN304	1-563-494-11	o	CONNECTOR, FPC 6P, FEMALE
CN305	1-565-211-11	o	CONNECTOR, FPC (ZIF) 22P FEMALE
D320	8-719-800-76	s	DIODE 1SS226
D321	8-719-800-76	s	DIODE 1SS226
IC301	8-759-908-81	s	IC MB3763PF
IC302	8-759-908-81	s	IC MB3763PF
PH301	8-719-939-11	s	PHOTOINTERRUPTER GP-2S09-B
PH302	8-719-939-11	s	PHOTOINTERRUPTER GP-2S09-B
PH303	8-719-939-11	s	PHOTOINTERRUPTER GP-2S09-B
#PS301	1-532-727-11	s	LINK, IC 0.25A
Q301	8-729-805-25	s	TRANSISTOR 2SB1121-S
Q302	8-729-216-22	s	TRANSISTOR 2SA1162
Q303	8-729-216-22	s	TRANSISTOR 2SA1162
Q304	8-729-216-22	s	TRANSISTOR 2SA1162
Q305	8-729-901-01	s	TRANSISTOR DTC144EK
Q306	8-729-901-01	s	TRANSISTOR DTC144EK
Q307	8-729-901-01	s	TRANSISTOR DTC144EK
R302	1-216-174-00	s	METAL CHIP 100 5% 1/8W
#R303	1-216-186-00	s	METAL 330 5% 1/8W

NOTE:Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

.For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

SE-10 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7061-823-A	o	MOUNTED CIRCUIT BOARD, SE-10
This board includes IG-4 Board.			
C006	1-126-157-11	s	ELECT 10uF 20% 16V
C008	1-163-095-00	s	CERAMIC, CHIP 12PF 5% 50V
C009	1-163-095-00	s	CERAMIC, CHIP 12PF 5% 50V
C012	1-126-163-11	s	ELECT 4.7MF 20% 50V
C013	1-126-157-11	s	ELECT 10uF 20% 16V
C016	1-163-077-00	s	CERAMIC 0.1uF 10% 25V
C020	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C022	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C028	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C034	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C101	1-126-157-11	s	ELECT 10uF 20% 16V
C102	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C103	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C104	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C110	1-126-320-11	s	ELECT, NONPOLAR 10uF 20% 16V
C111	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C112	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C113	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C115	1-126-157-11	s	ELECT 10uF 20% 16V
C116	1-124-499-11	s	ELECT, NONPOLAR 1uF 20% 50V
C120	1-163-209-00	s	CERAMIC 0.0015uF 5% 50V
C121	1-163-209-00	s	CERAMIC 0.0015uF 5% 50V
C122	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C127	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C128	1-124-767-00	s	ELECT, NONPOLAR 2.2uF 20% 50V
C129	1-126-163-11	s	ELECT 4.7MF 20% 50V
C130	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C131	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C132	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C133	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C134	1-124-499-11	s	ELECT, NONPOLAR 1uF 20% 50V
C136	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C137	1-124-768-11	s	ELECT, NONPOLAR 4.7uF 20% 50V
C202	1-163-123-00	s	CERAMIC, CHIP 180PF 5% 50V
C205	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C206	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C208	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C209	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C210	1-124-234-00	s	ELECT 22uF 20% 16V
C211	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C212	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C213	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C214	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C215	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C217	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C218	1-163-989-11	s	CERAMIC 0.033uF 10% 25V
C219	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C220	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C221	1-124-256-00	s	ELECT 1.5uF 20% 50V
C224	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C301	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C302	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C303	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C304	1-124-584-00	s	ELECT 100uF 20% 10V
C305	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C306	1-124-584-00	s	ELECT 100uF 20% 10V
C307	1-126-163-11	s	ELECT 4.7MF 20% 50V
C308	1-124-257-00	s	ELECT 2.2uF 20% 50V
C309	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C310	1-163-077-00	s	CERAMIC 0.1uF 10% 25V
C401	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C402	1-163-103-00	s	CERAMIC, CHIP 27PF 5% 50V
C403	1-126-163-11	s	ELECT 4.7MF 20% 50V
C404	1-126-163-11	s	ELECT 4.7MF 20% 50V
C405	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C408	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C409	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C412	1-126-157-11	s	ELECT 10uF 20% 16V
C503	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C504	1-124-257-00	s	ELECT 2.2uF 20% 50V
C506	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C508	1-124-589-11	s	ELECT 47uF 20% 16V
C601	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C604	1-124-589-11	s	ELECT 47uF 20% 16V
C606	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C607	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C608	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C610	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C611	1-126-157-11	s	ELECT 10uF 20% 16V
C612	1-126-157-11	s	ELECT 10uF 20% 16V
C613	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C614	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C615	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
#C616	1-164-633-11	s	CERAMIC, CHIP 0.1uF 10% 25V
C617	1-164-232-11	s	CERAMIC 0.01uF 10% 100V
C620	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C621	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C622	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C623	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C624	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C625	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C626	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C627	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C628	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C629	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C630	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C631	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C632	1-126-157-11	s	ELECT 10uF 20% 16V
CN001	1-566-641-11	o	CONNECTOR, EL-BOW 18P, MALE
CN002	1-566-941-11	o	CONNECTOR, EL-BOW 30P, MALE
CN003	1-566-641-11	o	CONNECTOR, EL-BOW 18P, MALE
CN004	1-566-943-11	s	CONNECTOR, BOARD TO BOARD 18P
CN005	1-566-944-11	s	CONNECTOR, BOARD TO BOARD 22P
CN011	1-565-212-11	s	CONNECTOR, FPC (ZIF) 26P FEMALE
CN012	1-565-211-11	o	CONNECTOR, FPC (ZIF) 22P FEMALE
D003	8-719-400-18	s	DIODE MA152WK
D004	8-719-400-18	s	DIODE MA152WK
D005	8-719-400-18	s	DIODE MA152WK
D006	8-719-104-34	s	DIODE 1S2835
D007	8-719-400-18	s	DIODE MA152WK
D008	8-719-400-18	s	DIODE MA152WK
D009	8-719-400-18	s	DIODE MA152WK
D012	8-719-400-18	s	DIODE MA152WK
#D013	8-719-400-18	s	DIODE MA152WK

NOTE:Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

.For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

(SE-10 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
#D015	8-719-104-34	s	DIODE 1S2835
#D016	8-719-104-34	s	DIODE 1S2835
#D018	8-719-911-19	s	DIODE 1SS119
D101	8-719-800-76	s	DIODE 1SS226
D102	8-719-800-76	s	DIODE 1SS226
D104	8-719-104-34	s	DIODE 1S2835
D105	8-719-400-18	s	DIODE MA152WK
D106	8-719-400-18	s	DIODE MA152WK
D107	8-719-104-34	s	DIODE 1S2835
D108	8-719-400-18	s	DIODE MA152WK
D109	8-719-400-18	s	DIODE MA152WK
D110	8-719-104-34	s	DIODE 1S2835
D111	8-719-400-18	s	DIODE MA152WK
D112	8-719-104-34	s	DIODE 1S2835
#D115	8-719-104-34	s	DIODE 1S2835
D201	8-719-400-18	s	DIODE MA152WK
D202	8-719-400-18	s	DIODE MA152WK
#D203	8-719-105-83	s	DIODE RD5.1M-B3
D301	8-719-400-18	s	DIODE MA152WK
D302	8-719-400-18	s	DIODE MA152WK
D401	8-719-800-76	s	DIODE 1SS226
D701	8-719-400-18	s	DIODE MA152WK
FL201	1-235-611-11	s	FILTER, BANDPASS 46.25kHz
FL202	1-235-612-11	s	FILTER, BANDPASS 16kHz
IC001	8-752-816-72	s	IC CXP80116-692Q
IC002	8-752-817-63	s	IC CXP5048H-243Q
IC003	8-752-815-13	s	IC CXP5048H-222Q
IC004	8-759-144-21	s	IC UPD75106G-573-1B
IC007	8-759-208-15	s	IC TC4066BFHB
IC008	8-759-937-56	s	IC S-8054ALB-LM-S
#IC009	8-759-209-15	s	IC TC4SU69F
IC101	8-752-003-50	s	IC CX20035
IC102	8-759-803-47	s	IC LA5005M
IC103	8-759-925-66	s	IC BA6303F
IC104	8-759-981-75	s	IC RC3403AM
#IC105	8-759-208-11	s	IC TC4053BFHB
IC106	8-759-971-25	s	IC MB674169U
IC107	8-759-100-94	s	IC UPC358G2
IC108	8-759-208-15	s	IC TC4066BFHB
IC201	8-759-928-56	s	IC XA1042M
IC202	8-759-150-05	s	IC UPC324G2-E1
#IC203	8-759-208-11	s	IC TC4053BFHB
IC204	8-759-927-46	s	IC SN74HC00NS
IC301	8-759-100-94	s	IC UPC358G2
#IC302	8-759-208-11	s	IC TC4053BFHB
#IC303	8-759-208-11	s	IC TC4053BFHB
IC304	8-759-200-90	s	IC TC4538BF
IC305	8-759-927-46	s	IC SN74HC00NS
IC601	8-759-927-94	s	IC BU3707F
IC602	8-759-927-52	s	IC BA7036LS
IC603	8-759-100-93	s	IC UPC393G2
IC604	8-759-150-05	s	IC UPC324G2-E1
L001	1-408-777-00	s	INDUCTOR CHIP 10UH
L002	1-408-777-00	s	INDUCTOR CHIP 10UH
L003	1-408-777-00	s	INDUCTOR CHIP 10UH
L101	1-408-777-00	s	INDUCTOR CHIP 10UH
L401	1-408-777-00	s	INDUCTOR CHIP 10UH

(SE-10 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
L402	1-408-777-00	s	INDUCTOR CHIP 10UH
L403	1-408-783-00	s	INDUCTOR CHIP 33UH
L404	1-408-777-00	s	INDUCTOR CHIP 10UH
L501	1-408-777-00	s	INDUCTOR CHIP 10UH
L601	1-408-777-00	s	INDUCTOR CHIP 10UH
L602	1-408-777-00	s	INDUCTOR CHIP 10UH
PS601	1-532-679-00	s	LINK, IC 0.6A
Q002	8-729-901-01	s	TRANSISTOR DTC144EK
Q003	8-729-901-06	s	TRANSISTOR DTA144EK
Q004	8-729-901-01	s	TRANSISTOR DTC144EK
Q005	8-729-901-01	s	TRANSISTOR DTC144EK
Q006	8-729-901-01	s	TRANSISTOR DTC144EK
Q007	8-729-901-01	s	TRANSISTOR DTC144EK
Q008	8-729-901-01	s	TRANSISTOR DTC144EK
Q009	8-729-901-01	s	TRANSISTOR DTC144EK
Q010	8-729-901-06	s	TRANSISTOR DTA144EK
Q011	8-729-901-06	s	TRANSISTOR DTA144EK
Q014	8-729-901-01	s	TRANSISTOR DTC144EK
Q015	8-729-901-01	s	TRANSISTOR DTC144EK
#Q018	8-729-901-01	s	TRANSISTOR DTC144EK
Q101	8-729-901-06	s	TRANSISTOR DTA144EK
Q102	8-729-901-06	s	TRANSISTOR DTA144EK
Q103	8-729-901-06	s	TRANSISTOR DTA144EK
Q104	8-729-901-01	s	TRANSISTOR DTC144EK
Q106	8-729-100-66	s	TRANSISTOR 2SC1623
Q107	8-729-901-06	s	TRANSISTOR DTA144EK
Q108	8-729-901-06	s	TRANSISTOR DTA144EK
Q109	8-729-901-06	s	TRANSISTOR DTA144EK
Q110	8-729-901-06	s	TRANSISTOR DTA144EK
Q111	8-729-100-66	s	TRANSISTOR 2SC1623
Q112	8-729-901-01	s	TRANSISTOR DTC144EK
Q113	8-729-901-01	s	TRANSISTOR DTC144EK
Q114	8-729-901-01	s	TRANSISTOR DTC144EK
#Q115	8-729-901-01	s	TRANSISTOR DTC144EK
Q116	8-729-901-06	s	TRANSISTOR DTA144EK
#Q117	8-729-901-06	s	TRANSISTOR DTA144EK
Q201	8-729-100-66	s	TRANSISTOR 2SC1623
Q202	8-729-216-22	s	TRANSISTOR 2SA1162
Q205	8-729-901-01	s	TRANSISTOR DTC144EK
Q206	8-729-901-06	s	TRANSISTOR DTA144EK
Q207	8-729-901-06	s	TRANSISTOR DTA144EK
Q208	8-729-100-66	s	TRANSISTOR 2SC1623
Q209	8-729-901-06	s	TRANSISTOR DTA144EK
Q210	8-729-901-01	s	TRANSISTOR DTC144EK
Q301	8-729-901-06	s	TRANSISTOR DTA144EK
Q302	8-729-901-01	s	TRANSISTOR DTC144EK
Q303	8-729-901-01	s	TRANSISTOR DTC144EK
Q304	8-729-901-01	s	TRANSISTOR DTC144EK
Q305	8-729-901-01	s	TRANSISTOR DTC144EK
Q306	8-729-901-06	s	TRANSISTOR DTA144EK
#Q307	8-729-901-01	s	TRANSISTOR DTC144EK
#Q308	8-729-901-01	s	TRANSISTOR DTC144EK
#Q309	8-729-901-01	s	TRANSISTOR DTC144EK
Q401	8-729-216-22	s	TRANSISTOR 2SA1162
Q402	8-729-100-66	s	TRANSISTOR 2SC1623
Q403	8-729-100-66	s	TRANSISTOR 2SC1623
Q404	8-729-216-22	s	TRANSISTOR 2SA1162

NOTE:Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

.For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

(SE-10 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
Q405	8-729-100-66	s	TRANSISTOR 2SC1623
Q406	8-729-216-22	s	TRANSISTOR 2SA1162
Q407	8-729-100-66	s	TRANSISTOR 2SC1623
Q408	8-729-216-22	s	TRANSISTOR 2SA1162
Q409	8-729-100-66	s	TRANSISTOR 2SC1623
Q410	8-729-100-66	s	TRANSISTOR 2SC1623
Q411	8-729-100-66	s	TRANSISTOR 2SC1623
Q502	8-729-100-66	s	TRANSISTOR 2SC1623
Q503	8-729-901-06	s	TRANSISTOR DTA144EK
Q504	8-729-100-66	s	TRANSISTOR 2SC1623
Q505	8-729-100-66	s	TRANSISTOR 2SC1623
Q506	8-729-100-66	s	TRANSISTOR 2SC1623
Q507	8-729-901-06	s	TRANSISTOR DTA144EK
Q508	8-729-901-06	s	TRANSISTOR DTA144EK
Q601	8-729-901-06	s	TRANSISTOR DTA144EK
Q604	8-729-805-25	s	TRANSISTOR 2SB1121-S
Q605	8-729-100-66	s	TRANSISTOR 2SC1623
Q701	8-729-901-06	s	TRANSISTOR DTA144EK
Q702	8-729-901-06	s	TRANSISTOR DTA144EK
Q703	8-729-901-01	s	TRANSISTOR DTC144EK
Q704	8-729-216-22	s	TRANSISTOR 2SA1162
Q705	8-729-216-22	s	TRANSISTOR 2SA1162
Q706	8-729-100-66	s	TRANSISTOR 2SC1623
Q707	8-729-100-66	s	TRANSISTOR 2SC1623
Q708	8-729-901-06	s	TRANSISTOR DTA144EK
Q709	8-729-901-06	s	TRANSISTOR DTA144EK
Q710	8-729-901-06	s	TRANSISTOR DTA144EK
Q711	8-729-901-06	s	TRANSISTOR DTA144EK
Q712	8-729-901-06	s	TRANSISTOR DTA144EK
Q713	8-729-901-01	s	TRANSISTOR DTC144EK
Q714	8-729-901-01	s	TRANSISTOR DTC144EK
#R018	1-216-691-11	s	METAL, CHIP 47K 0.5% 1/10W
#R019	1-216-691-11	s	METAL, CHIP 47K 0.5% 1/10W
R020	1-216-687-11	s	METAL, CHIP 33K 0.5% 1/10W
R021	1-216-687-11	s	METAL, CHIP 33K 0.5% 1/10W
R022	1-216-687-11	s	METAL, CHIP 33K 0.5% 1/10W
R023	1-216-674-11	s	METAL, CHIP 9.1K 0.5% 1/10W
R076	1-216-080-00	s	METAL, CHIP 20K 5% 1/10W
R077	1-216-080-00	s	METAL, CHIP 20K 5% 1/10W
R078	1-216-080-00	s	METAL, CHIP 20K 5% 1/10W
R079	1-216-080-00	s	METAL, CHIP 20K 5% 1/10W
R080	1-216-080-00	s	METAL, CHIP 20K 5% 1/10W
R081	1-216-080-00	s	METAL, CHIP 20K 5% 1/10W
R082	1-216-080-00	s	METAL, CHIP 20K 5% 1/10W
R083	1-216-080-00	s	METAL, CHIP 20K 5% 1/10W
R084	1-216-080-00	s	METAL, CHIP 20K 5% 1/10W
#R094	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R137	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R138	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
#R143	1-216-682-11	s	METAL, CHIP 20K 0.5% 1/10W
R152	1-216-082-00	s	METAL CHIP 24K 5% 1/10W
R413	1-216-052-00	s	METAL, CHIP 1.3K 5% 1/10W
R508	1-216-076-00	s	METAL CHIP 13K 5% 1/10W
R553	1-216-748-11	s	METAL, CHIP 39K 1% 1/10W
#R554	1-216-685-11	s	METAL, CHIP 27K 0.5% 1/10W
#R562	1-216-090-00	s	METAL, CHIP 51K 5% 1/10W
R703	1-216-695-11	s	METAL, CHIP 68K 0.5% 1/10W
R704	1-216-697-11	s	METAL, CHIP 82K 0.5% 1/10W
R705	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R706	1-216-697-11	s	METAL, CHIP 82K 0.5% 1/10W
R708	1-216-685-11	s	METAL, CHIP 27K 0.5% 1/10W
R709	1-216-681-11	s	METAL, CHIP 18K 0.5% 1/10W
R710	1-216-681-11	s	METAL, CHIP 18K 0.5% 1/10W
R711	1-216-666-11	s	METAL, CHIP 4.3K 0.5% 1/10W
R712	1-216-693-11	s	METAL, CHIP 56K 0.5% 1/10W
R713	1-216-691-11	s	METAL, CHIP 47K 0.5% 1/10W
R714	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
RV101	1-230-875-21	s	RES, ADJ, METAL 220K
RV102	1-230-875-21	s	RES, ADJ, METAL 220K
RV103	1-230-871-11	s	RES, ADJ, METAL 22K
RV104	1-230-871-11	s	RES, ADJ, METAL 22K
RV105	1-230-870-11	s	RES, ADJ, METAL 10K
RV106	1-230-870-11	s	RES, ADJ, METAL 10K
RV201	1-230-873-11	s	RES, ADJ, METAL 47K
RV203	1-230-869-11	s	RES, ADJ, METAL 4.7K
RV204	1-230-869-11	s	RES, ADJ, METAL 4.7K
RV301	1-230-868-11	s	RES, ADJ, METAL 2.2K
RV302	1-230-868-11	s	RES, ADJ, METAL 2.2K
RV303	1-230-869-11	s	RES, ADJ, METAL 4.7K
RV304	1-230-873-11	s	RES, ADJ, METAL 47K
X001	1-577-116-21	s	CRYSTAL 16MHz
X002	1-567-346-11	s	RESONATOR, CERAMIC
X003	1-567-346-11	s	RESONATOR, CERAMIC
X004	1-567-160-21	s	RESONATOR, CERAMIC 4.19MHz
X101	1-567-505-11	s	CRYSTAL 3.579545MHz

SW-346 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
#1pc	1-631-793-12	o	PRINTED CIRCUIT BOARD, SW-346
CN224	1-506-471-11	s	CONNECTOR, 6P, MALE
R1	1-249-433-11	s	CARBON 22K 5% 1/4W
R2	1-249-433-11	s	CARBON 22K 5% 1/4W
RV1	1-238-483-11	s	RES, VAR CARBON 5K
RV2	1-238-483-11	s	RES, VAR CARBON 5K
S1002	1-516-963-00	s	SWITCH, LEVER SLIDE

NOTE:Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

.For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

SW-347 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-631-794-11	o	PRINTED CIRCUIT BOARD, SW-347
1pc	3-695-988-01	o	HOLDER (RE), LED
C1	1-124-589-11	s	ELECT 47uF 20% 16V
D3	8-719-812-43	s	LED TLG124A, GRN
R3	1-249-411-11	s	CARBON 330 5% 1/4W
RV2	1-230-122-00	s	RES, VAR CARBON 100K
S1	1-554-481-00	s	SWITCH, SLIDE
S2	1-554-481-00	s	SWITCH, SLIDE
#S3	1-571-908-11	s	SWITCH, SLIDE
#S4	1-571-908-11	s	SWITCH, SLIDE
S5	1-554-481-00	s	SWITCH, SLIDE

SW-348 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-631-795-11	o	PRINTED CIRCUIT BOARD, SW-348
S1007	1-516-961-00	s	SWITCH, LEVER SLIDE

SY-145 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7061-774-A	o	MOUNTED CIRCUIT BOARD, SY-145
1pc	3-657-153-00	o	HINGE
1pc	7-682-903-01	s	SCREW +PWH 3X5
C1	1-130-487-00	s	MYLAR 0.022uF 5% 50V
C2	1-162-207-31	s	CERAMIC 22PF 5% 50V
C3	1-130-487-00	s	MYLAR 0.022uF 5% 50V
C4	1-162-207-31	s	CERAMIC 22PF 5% 50V
C5	1-162-210-31	s	CERAMIC 30PF 5% 50V
C6	1-162-210-31	s	CERAMIC 30PF 5% 50V
C8	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C9	1-161-051-00	s	CERAMIC 0.01uF 10% 50V
C10	1-126-233-11	s	ELECT 22uF 20% 50V
C12	1-131-349-00	s	TANTALUM 2.2uF 10% 35V
C14	1-124-927-11	s	ELECT 4.7uF 20% 100V
C15	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C16	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C17	1-107-085-00	s	MICA 100PF 5% 50V
C18	1-107-085-00	s	MICA 100PF 5% 50V
C19	1-162-282-31	s	CERAMIC 100PF 10% 50V
C20	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C21	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C23	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C25	1-161-055-00	s	CERAMIC 0.022uF 10% 50V
C26	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C27	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C28	1-124-126-00	s	ELECT 47uF 20% 25V
C29	1-107-085-00	s	MICA 100PF 5% 50V
C30	1-107-085-00	s	MICA 100PF 5% 50V
C31	1-162-282-31	s	CERAMIC 100PF 10% 50V
C100	1-162-282-31	s	CERAMIC 100PF 10% 50V
C101	1-130-471-00	s	MYLAR 0.001uF 5% 50V
C102	1-130-473-00	s	MYLAR 0.0015uF 5% 50V
C103	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C104	1-107-159-00	s	MICA 33PF 5% 500V
C105	1-130-471-00	s	MYLAR 0.001uF 5% 50V
C106	1-130-477-00	s	MYLAR 0.0033uF 5% 50V
C108	1-130-475-00	s	MYLAR 0.0022uF 5% 50V
C109	1-162-294-31	s	CERAMIC 0.001uF 10% 50V
C110	1-162-288-31	s	CERAMIC 330PF 10% 50V
C112	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C115	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C116	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C117	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C118	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C204	1-124-234-00	s	ELECT 22uF 20% 16V
C206	1-130-471-00	s	MYLAR 0.001uF 5% 50V
C207	1-130-477-00	s	MYLAR 0.0033uF 5% 50V
C208	1-162-294-31	s	CERAMIC 0.001uF 10% 50V
C209	1-130-475-00	s	MYLAR 0.0022uF 5% 50V
C210	1-162-288-31	s	CERAMIC 330PF 10% 50V
C212	1-126-157-11	s	ELECT 10uF 20% 16V
C213	1-162-210-31	s	CERAMIC 30PF 5% 50V
C214	1-162-210-31	s	CERAMIC 30PF 5% 50V
C215	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C217	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C218	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C219	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C220	1-130-491-00	s	MYLAR 0.047uF 5% 50V

NOTE:Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

.For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

(SY-145 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C221	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C222	1-130-475-00	s	MYLAR 0.0022uF 5% 50V
C223	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C307	1-162-210-31	s	CERAMIC 30PF 5% 50V
C308	1-162-210-31	s	CERAMIC 30PF 5% 50V
C309	1-130-471-00	s	MYLAR 0.001uF 5% 50V
C310	1-130-471-00	s	MYLAR 0.001uF 5% 50V
C312	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C313	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C314	1-162-290-31	s	CERAMIC 470PF 10% 50V
C316	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C317	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C318	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C319	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C320	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C321	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C322	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C323	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C324	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C325	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C326	1-130-490-11	s	MYLAR 0.039uF 5% 50V
#C327	1-162-282-31	s	CERAMIC 100PF 10% 50V
#C400	1-162-286-31	s	CERAMIC 220PF 10% 50V
CN509	1-506-471-11	s	CONNECTOR, 6P, MALE
CV100	1-141-389-11	s	CAP, TRIMMER 50PF
D1	8-719-911-19	s	DIODE 1SS119
D2	8-719-911-19	s	DIODE 1SS119
D3	8-719-911-19	s	DIODE 1SS119
D5	8-719-911-19	s	DIODE 1SS119
D6	8-719-911-19	s	DIODE 1SS119
D201	8-719-911-19	s	DIODE 1SS119
D202	8-719-911-19	s	DIODE 1SS119
D203	8-719-911-19	s	DIODE 1SS119
D301	8-719-911-19	s	DIODE 1SS119
D302	8-719-911-19	s	DIODE 1SS119
D303	8-719-911-19	s	DIODE 1SS119
#IC1	8-759-208-86	s	IC TMPZ84C011AF-6
#IC2	8-759-735-58	s	IC EVO9800-SYV105
IC3	8-752-331-06	s	IC CXK5864PN-12L
IC4	8-752-323-26	s	IC CXK1009P
IC5	8-759-916-84	s	IC LH0084A
IC6	8-759-938-68	s	IC CXD1095Q
IC7	8-759-916-94	s	IC SN74HC373N
IC8	8-759-045-38	s	IC MC14538BCP
IC9	8-759-916-14	s	IC SN74HC04N
IC10	8-759-917-46	s	IC 74F11PC
IC11	8-759-240-69	s	IC TC4069UBP
IC12	8-759-008-57	s	IC MC34051P
IC13	8-759-916-25	s	IC SN74HC32N
IC14	8-759-916-46	s	IC SN74HC139N
IC15	8-759-916-14	s	IC SN74HC04N
IC16	8-759-146-83	s	IC UPD7564CS-110
IC17	8-759-904-83	s	IC 74F32PC
IC18	8-759-916-20	s	IC SN74HC14N
IC19	8-759-803-70	s	IC SN74HC08N
IC100	8-759-908-23	s	IC MB88303

NOTE:Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

(SY-145 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
IC101	8-759-045-38	s	IC MC14538BCP
IC102	8-759-045-38	s	IC MC14538BCP
IC103	8-759-981-64	s	IC LM2903DQ
IC104	8-759-000-27	s	IC MC14017BCP
IC105	8-759-916-29	s	IC SN74HC74N
IC106	8-759-045-38	s	IC MC14538BCP
IC107	8-759-340-13	s	IC HD14013BP
IC200	8-743-915-10	s	IC BX3915A
IC201	8-759-981-64	s	IC LM2903DQ
IC202	8-759-000-27	s	IC MC14017BCP
IC203	8-759-045-38	s	IC MC14538BCP
IC204	8-759-984-95	s	IC MB88201H-652M
IC300	8-759-991-72	s	IC MB88505H-1115M
IC301	8-759-916-21	s	IC SN74HC20N
IC302	8-759-203-05	s	IC TC74HC193P
IC303	8-759-203-05	s	IC TC74HC193P
IC304	8-759-916-25	s	IC SN74HC32N
IC305	8-759-916-29	s	IC SN74HC74N
IC306	8-759-240-71	s	IC TC4071BP
IC307	8-759-916-20	s	IC SN74HC14N
IC308	8-759-803-70	s	IC SN74HC08N
IC309	8-759-916-21	s	IC SN74HC20N
IC310	8-759-916-20	s	IC SN74HC14N
PS1	⚠1-532-679-00	s	LINK, IC 0.6A
Q1	8-729-900-89	s	TRANSISTOR DTC144ES
Q2	8-729-900-65	s	TRANSISTOR DTA144ES
Q3	8-729-900-89	s	TRANSISTOR DTC144ES
Q4	8-729-900-89	s	TRANSISTOR DTC144ES
Q6	8-729-900-89	s	TRANSISTOR DTC144ES
Q7	8-729-900-89	s	TRANSISTOR DTC144ES
Q8	8-729-900-89	s	TRANSISTOR DTC144ES
Q9	8-729-900-89	s	TRANSISTOR DTC144ES
Q10	8-729-900-89	s	TRANSISTOR DTC144ES
Q11	8-729-900-89	s	TRANSISTOR DTC144ES
Q12	8-729-900-89	s	TRANSISTOR DTC144ES
Q13	8-729-178-55	s	TRANSISTOR 2SC2785-E
Q14	8-729-900-65	s	TRANSISTOR DTA144ES
Q15	8-729-900-89	s	TRANSISTOR DTC144ES
Q201	8-729-900-89	s	TRANSISTOR DTC144ES
Q202	8-729-900-89	s	TRANSISTOR DTC144ES
Q203	8-729-900-89	s	TRANSISTOR DTC144ES
Q204	8-729-900-89	s	TRANSISTOR DTC144ES
Q205	8-729-900-89	s	TRANSISTOR DTC144ES
Q206	8-729-900-89	s	TRANSISTOR DTC144ES
Q207	8-729-900-89	s	TRANSISTOR DTC144ES
Q301	8-729-900-89	s	TRANSISTOR DTC144ES
Q302	8-729-900-89	s	TRANSISTOR DTC144ES
R1	1-249-433-11	s	CARBON 22K 5% 1/4W
R2	1-249-441-11	s	CARBON 100K 5% 1/4W
R3	1-249-433-11	s	CARBON 22K 5% 1/4W
R4	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R5	1-249-429-11	s	CARBON 10K 5% 1/4W
R6	1-249-405-11	s	CARBON 100 5% 1/4W
R7	1-249-437-11	s	CARBON 47K 5% 1/4W
R8	1-249-437-11	s	CARBON 47K 5% 1/4W
R9	1-249-429-11	s	CARBON 10K 5% 1/4W
R10	1-249-433-11	s	CARBON 22K 5% 1/4W

.For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

(SY-145 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R11	1-249-433-11	s	CARBON 22K 5% 1/4W
R12	1-249-429-11	s	CARBON 10K 5% 1/4W
R13	1-249-429-11	s	CARBON 10K 5% 1/4W
R14	1-249-426-11	s	CARBON 5.6K 5% 1/4W
R15	1-249-433-11	s	CARBON 22K 5% 1/4W
R16	1-249-433-11	s	CARBON 22K 5% 1/4W
R17	1-249-426-11	s	CARBON 5.6K 5% 1/4W
R18	1-249-436-11	s	CARBON 39K 5% 1/4W
R19	1-249-436-11	s	CARBON 39K 5% 1/4W
R20	1-249-437-11	s	CARBON 47K 5% 1/4W
R21	1-249-429-11	s	CARBON 10K 5% 1/4W
R22	1-249-429-11	s	CARBON 10K 5% 1/4W
R24	1-249-405-11	s	CARBON 100 5% 1/4W
R25	1-249-411-11	s	CARBON 330 5% 1/4W
R26	1-249-437-11	s	CARBON 47K 5% 1/4W
R27	1-249-437-11	s	CARBON 47K 5% 1/4W
R28	1-249-437-11	s	CARBON 47K 5% 1/4W
R29	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R30	1-249-429-11	s	CARBON 10K 5% 1/4W
R31	1-249-429-11	s	CARBON 10K 5% 1/4W
R32	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R33	1-249-437-11	s	CARBON 47K 5% 1/4W
R34	1-249-435-11	s	CARBON 33K 5% 1/4W
R35	1-249-437-11	s	CARBON 47K 5% 1/4W
R36	1-249-429-11	s	CARBON 10K 5% 1/4W
R37	1-249-405-11	s	CARBON 100 5% 1/4W
R38	1-249-436-11	s	CARBON 39K 5% 1/4W
R39	1-249-405-11	s	CARBON 100 5% 1/4W
R40	1-249-441-11	s	CARBON 100K 5% 1/4W
R41	1-247-903-00	s	CARBON 1M 5% 1/4W
R42	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R43	1-249-433-11	s	CARBON 22K 5% 1/4W
R44	1-247-903-00	s	CARBON 1M 5% 1/4W
R45	1-249-429-11	s	CARBON 10K 5% 1/4W
R46	1-249-429-11	s	CARBON 10K 5% 1/4W
R47	1-249-437-11	s	CARBON 47K 5% 1/4W
R48	1-249-429-11	s	CARBON 10K 5% 1/4W
R49	1-249-422-11	s	CARBON 2.7K 5% 1/4W
R50	1-249-410-11	s	CARBON 270 5% 1/4W
#R51	1-249-405-11	s	CARBON 100 5% 1/4W
R52	1-249-419-11	s	CARBON 1.5K 5% 1/4W
R53	1-249-405-11	s	CARBON 100 5% 1/4W
R54	1-249-419-11	s	CARBON 1.5K 5% 1/4W
R56	1-249-417-11	s	CARBON 1K 5% 1/4W
R57	1-249-417-11	s	CARBON 1K 5% 1/4W
R58	1-249-429-11	s	CARBON 10K 5% 1/4W
R59	1-249-429-11	s	CARBON 10K 5% 1/4W
R60	1-249-417-11	s	CARBON 1K 5% 1/4W
R61	1-249-417-11	s	CARBON 1K 5% 1/4W
R62	1-249-417-11	s	CARBON 1K 5% 1/4W
R63	1-249-417-11	s	CARBON 1K 5% 1/4W
R64	1-249-417-11	s	CARBON 1K 5% 1/4W
R65	1-249-417-11	s	CARBON 1K 5% 1/4W
R66	1-249-417-11	s	CARBON 1K 5% 1/4W
R67	1-249-417-11	s	CARBON 1K 5% 1/4W
R69	1-249-405-11	s	CARBON 100 5% 1/4W
R70	1-249-405-11	s	CARBON 100 5% 1/4W
R71	1-249-427-11	s	CARBON 6.8K 5% 1/4W
R72	1-249-437-11	s	CARBON 47K 5% 1/4W

NOTE:Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

(SY-145 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R73	1-249-405-11	s	CARBON 100 5% 1/4W
R74	1-249-417-11	s	CARBON 1K 5% 1/4W
R75	1-249-417-11	s	CARBON 1K 5% 1/4W
R76	1-249-417-11	s	CARBON 1K 5% 1/4W
R77	1-249-417-11	s	CARBON 1K 5% 1/4W
R78	1-249-417-11	s	CARBON 1K 5% 1/4W
R79	1-249-417-11	s	CARBON 1K 5% 1/4W
R80	1-249-405-11	s	CARBON 100 5% 1/4W
R81	1-247-881-00	s	CARBON 120K 5% 1/4W
R82	1-247-881-00	s	CARBON 120K 5% 1/4W
R83	1-249-437-11	s	CARBON 47K 5% 1/4W
#R84	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R100	1-249-429-11	s	CARBON 10K 5% 1/4W
R101	1-249-437-11	s	CARBON 47K 5% 1/4W
R102	1-249-417-11	s	CARBON 1K 5% 1/4W
R104	1-249-429-11	s	CARBON 10K 5% 1/4W
R106	1-249-417-11	s	CARBON 1K 5% 1/4W
R107	1-249-417-11	s	CARBON 1K 5% 1/4W
R108	1-249-405-11	s	CARBON 100 5% 1/4W
R109	1-215-460-00	s	METAL 43K 1% 1/6W
R111	1-249-434-11	s	CARBON 27K 5% 1/4W
R112	1-249-437-11	s	CARBON 47K 5% 1/4W
R113	1-249-426-11	s	CARBON 5.6K 5% 1/4W
R114	1-249-429-11	s	CARBON 10K 5% 1/4W
R115	1-249-440-11	s	CARBON 82K 5% 1/4W
R116	1-249-429-11	s	CARBON 10K 5% 1/4W
R118	1-249-441-11	s	CARBON 100K 5% 1/4W
R119	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R120	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R200	1-249-437-11	s	CARBON 47K 5% 1/4W
R202	1-249-435-11	s	CARBON 33K 5% 1/4W
R207	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R208	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R209	1-249-409-11	s	CARBON 220 5% 1/4W
R210	1-249-427-11	s	CARBON 6.8K 5% 1/4W
R211	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R212	1-215-460-00	s	METAL 43K 1% 1/6W
R213	1-249-434-11	s	CARBON 27K 5% 1/4W
R214	1-249-437-11	s	CARBON 47K 5% 1/4W
R215	1-249-426-11	s	CARBON 5.6K 5% 1/4W
R217	1-249-429-11	s	CARBON 10K 5% 1/4W
R218	1-249-440-11	s	CARBON 82K 5% 1/4W
R219	1-249-441-11	s	CARBON 100K 5% 1/4W
R221	1-249-429-11	s	CARBON 10K 5% 1/4W
R222	1-249-429-11	s	CARBON 10K 5% 1/4W
R223	1-249-417-11	s	CARBON 1K 5% 1/4W
R224	1-249-405-11	s	CARBON 100 5% 1/4W
R225	1-249-405-11	s	CARBON 100 5% 1/4W
R227	1-249-405-11	s	CARBON 100 5% 1/4W
R228	1-249-437-11	s	CARBON 47K 5% 1/4W
R229	1-215-480-00	s	METAL 300K 1% 1/6W
R230	1-249-440-11	s	CARBON 82K 5% 1/4W
R231	1-249-437-11	s	CARBON 47K 5% 1/4W
R301	1-249-441-11	s	CARBON 100K 5% 1/4W
R302	1-249-441-11	s	CARBON 100K 5% 1/4W
R303	1-249-429-11	s	CARBON 10K 5% 1/4W
R321	1-249-429-11	s	CARBON 10K 5% 1/4W
R322	1-249-433-11	s	CARBON 22K 5% 1/4W
R323	1-249-433-11	s	CARBON 22K 5% 1/4W

.For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

(SY-145 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R327	1-249-417-11	s	CARBON 1K 5% 1/4W
R336	1-249-429-11	s	CARBON 10K 5% 1/4W
R337	1-249-429-11	s	CARBON 10K 5% 1/4W
R338	1-249-441-11	s	CARBON 100K 5% 1/4W
R339	1-249-433-11	s	CARBON 22K 5% 1/4W
R343	1-249-405-11	s	CARBON 100 5% 1/4W
R347	1-249-405-11	s	CARBON 100 5% 1/4W
R348	1-249-405-11	s	CARBON 100 5% 1/4W
R349	1-249-417-11	s	CARBON 1K 5% 1/4W
R350	1-249-405-11	s	CARBON 100 5% 1/4W
R351	1-249-429-11	s	CARBON 10K 5% 1/4W
R352	1-247-881-00	s	CARBON 120K 5% 1/4W
R353	1-249-429-11	s	CARBON 10K 5% 1/4W
R354	1-249-437-11	s	CARBON 47K 5% 1/4W
#R355	1-249-417-11	s	CARBON 1K 5% 1/4W
#R356	1-249-417-11	s	CARBON 1K 5% 1/4W
#R357	1-249-405-11	s	CARBON 100 5% 1/4W
#R358	1-249-405-11	s	CARBON 100 5% 1/4W
#R359	1-249-417-11	s	CARBON 1K 5% 1/4W
#R360	1-249-405-11	s	CARBON 100 5% 1/4W
#R361	1-249-405-11	s	CARBON 100 5% 1/4W
#R362	1-249-417-11	s	CARBON 1K 5% 1/4W
#R363	1-249-425-11	s	CARBON 4.7K 5% 1/4W
#R364	1-249-437-11	s	CARBON 47K 5% 1/4W
RB3	1-231-410-00	s	RESISTOR BLOCK 10Kx8
RB6	1-235-109-00	s	RESISTOR BLOCK 22KX8
RB10	1-231-410-00	s	RESISTOR BLOCK 10Kx8
RV1	1-230-499-11	s	RES, ADJ METAL 100K
#RV2	1-237-505-21	s	RES, ADJ, METAL 50K
X1	1-567-870-11	s	RESONATOR, CERAMIC 614KHz
X2	1-567-132-00	s	RESONATOR, CERAMIC 8.00MHz
X3	1-567-870-11	s	RESONATOR, CERAMIC 614KHz
X4	1-567-132-00	s	RESONATOR, CERAMIC 8.00MHz
X5	1-567-132-00	s	RESONATOR, CERAMIC 8.00MHz

TS-74(LEFT)BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7070-628-A	o	MOUNTED CIRCUIT BOARD, TS-74 (LEFT)
Q715	8-729-700-11	s	NJL7141E-N

TS-74(RIGHT)BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7070-627-A	o	MOUNTED CIRCUIT BOARD, TS-74 (RIGHT)
Q715	8-729-700-11	s	NJL7141E-N

NOTE: Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

. For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

UR-14 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1	⚠1-413-248-12	s	SWITCHING REGULATOR, UR-14
C101	⚠1-161-742-00	s	CERAMIC 2200PF 20% 400V
C102	⚠1-161-742-00	s	CERAMIC 2200PF 20% 400V
C103	⚠1-161-742-00	s	CERAMIC 2200PF 20% 400V
C104	⚠1-161-742-00	s	CERAMIC 2200PF 20% 400V
C105	⚠1-136-212-00	s	MYLAR 0.1 20% 250V
C106	⚠1-136-212-00	s	MYLAR 0.1 20% 250V
C107	⚠1-161-742-00	s	CERAMIC 2200PF 20% 400V
C108	⚠1-161-742-00	s	CERAMIC 2200PF 20% 400V
C109	1-124-961-00	s	ELECT 220 20% 200V
C110	1-124-023-00	s	ELECT 4.7 20% 350V
C111	1-124-023-00	s	ELECT 4.7 20% 350V
C112	1-124-549-00	s	ELECT 100 20% 10V
C113	1-124-961-00	s	ELECT 220 20% 200V
C114	1-124-549-00	s	ELECT 100 20% 10V
C201	1-108-413-00	s	MYLAR 2200PF 10% 200V
C202	1-108-413-00	s	MYLAR 2200PF 10% 200V
C203	1-161-825-11	s	CERAMIC 220PF 10% 500V
C204	1-161-825-11	s	CERAMIC 220PF 10% 500V
C205	1-161-825-11	s	CERAMIC 220PF 10% 500V
C206	1-161-825-11	s	CERAMIC 220PF 10% 500V
C207	1-123-357-00	s	ELECT 22 20% 50V
C209	1-108-413-00	s	MYLAR 2200PF 10% 200V
C210	1-136-153-00	s	MYLAR 0.01 5% 50V
C211	1-130-516-00	s	MYLAR 0.01 5% 50V
C212	1-124-556-00	s	ELECT 2200 20% 16V
C213	1-124-556-00	s	ELECT 2200 20% 16V
C214	1-124-556-00	s	ELECT 2200 20% 16V
C215	1-124-556-00	s	ELECT 2200 20% 16V
C216	1-123-326-00	s	ELECT 3300 20% 16V
C217	1-123-332-00	s	ELECT 47 20% 50V
C651	1-124-445-00	s	ELECT 100 20% 16V
C652	1-130-591-11	s	MYLAR 3300PF 2% 100V
C653	1-136-141-00	s	MYLAR 1000PF 10% 50V
C654	1-136-165-00	s	MYLAR 0.1 5% 50V
C655	1-123-318-00	s	ELECT 33 16V
CN101	⚠1-560-436-00	o	RECEPTACLE, 3P
	⚠1-561-218-11	o	HOUSING, 3P
	⚠1-561-254-11	o	CONTACT
CN201	1-560-438-00	o	RECEPTACLE, 5P
	1-561-424-11	o	HOUSING, 5P
	1-561-254-11	o	CONTACT
D101	8-719-300-00	s	LB-156
D201	8-719-908-00	s	ESAC33-02CS
D202	8-719-908-00	s	ESAC33-02CS
D203	8-719-900-93	s	V09C
D204	8-719-900-93	s	V09C
D205	8-719-815-55	s	1S1555
D206	8-719-100-61	s	RD11EB2
D208	8-719-101-67	s	RD7.5EL2
D209	8-719-100-30	s	RD5.1EB2
D210	8-719-100-30	s	RD5.1EB2
D651	8-719-200-02	s	10E-2
D652	8-719-100-70	s	RD15EB1
D653	8-719-815-55	s	1S1555
FB101	1-543-060-00	s	CORE
FB102	1-543-060-00	s	CORE

(UR-14 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
FB201	1-543-060-00	s	CORE
FB202	1-543-060-00	s	CORE
FB203	1-543-060-00	s	CORE
FB204	1-543-060-00	s	CORE
FB205	1-543-060-00	s	CORE
FB206	1-543-060-00	s	CORE
FB207	1-543-060-00	s	CORE
FB208	1-543-060-00	s	CORE
FB209	1-543-060-00	s	CORE
IC651	8-759-937-00	s	MB3759
L101	⚠1-421-848-11	s	LINE FILTER
L201	1-421-849-11	s	CHOKE, 2.4 mH
L203	1-408-316-00	s	CHOKE
L204	1-421-850-11	s	CHOKE, 12
L205	1-421-329-00	s	CHOKE
Q101	8-729-901-72	s	2SC3317
Q102	8-729-901-72	s	2SC3317
Q103	8-729-100-13	s	2SC2001
Q104	8-729-100-13	s	2SC2001
Q201	8-729-606-34	s	2SC2603-G
Q202	8-729-117-54	s	2SA1175-F
R101	1-214-947-00	s	METAL 2.7M 1% 1/2W
R102	⚠1-205-636-11	s	CEMENT 3.3 5% 5W
R103	1-246-529-00	s	CARBON 220k 5% 1/4W
R104	1-246-529-00	s	CARBON 220k 5% 1/4W
R105	⚠1-212-934-00	s	METAL 1 5% 1/2W
R106	1-247-700-11	s	NF CARBON 100 5% 1/4W
R107	1-246-529-00	s	CARBON 220k 5% 1/4W
R108	1-246-529-00	s	CARBON 220k 5% 1/4W
R109	⚠1-212-934-00	s	METAL 1 5% 1/2W
R110	1-247-700-11	s	NF CARBON 100 5% 1/4W
R111	⚠1-205-715-00	s	CEMENT 3.3 5% 5W
R201	⚠1-206-475-00	s	METAL 33 5% 2W
R202	1-535-369-00	s	SHUNT 0.02 2W
R203	⚠1-213-151-00	s	METAL 4.7k 5% 5W
R204	1-247-713-11	s	NF CARBON 1k 5% 1/4W
R205	1-247-719-11	s	NF CARBON 3.3k 5% 1/4W
R206	1-249-455-11	s	NF CARBON 4.7k 5% 1/4W
R207	1-247-717-11	s	NF CARBON 2.2k 5% 1/4W
R208	1-247-123-00	s	NF CARBON 470 5% 1/4W
R209	1-247-704-11	s	NF CARBON 220 5% 1/4W
R212	1-247-857-00	s	NF CARBON 220 5% 1/2W
R651	1-249-425-11	s	NF CARBON 4.7k 5% 1/6W
RV651	1-228-644-00	s	VAR, METAL 1k 0.3W
T101	⚠1-448-423-11	s	CONVERTER
T102	⚠1-437-120-00	s	DRIVE

NOTE: Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

. For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

VO-24 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7061-776-A	o	MOUNTED CIRCUIT BOARD, VO-24
1pc	3-657-153-00	o	HINGE
1pc	7-682-903-01	s	SCREW +PWH 3X5
C3	1-161-494-00	s	CERAMIC 0.022uF 25V
C6	1-161-021-11	s	CERAMIC 0.047uF 10% 25V
C7	1-130-499-00	s	MYLAR 0.22uF 5% 50V
C11	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C12	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C13	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C14	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C15	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C16	1-126-157-11	s	ELECT 10uF 20% 16V
C17	1-161-494-00	s	CERAMIC 0.022uF 25V
C19	1-161-494-00	s	CERAMIC 0.022uF 25V
C20	1-124-360-00	s	ELECT 1000uF 20% 16V
C22	1-107-210-00	s	MICA 22PF 5% 500V
C23	1-107-045-00	s	MICA 3.9PF 500V
C24	1-126-176-11	s	ELECT 220uF 20% 10V
C25	1-130-471-00	s	MYLAR 0.001uF 5% 50V
C26	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C33	1-124-360-00	s	ELECT 1000uF 20% 16V
C36	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C38	1-162-714-11	s	CERAMIC 150PF 1% 50V
C39	1-161-021-11	s	CERAMIC 0.047uF 10% 25V
C51	1-107-157-00	s	MICA 27PF 5% 500V
C53	1-124-126-00	s	ELECT 47uF 20% 25V
C54	1-126-157-11	s	ELECT 10uF 20% 16V
C55	1-126-157-11	s	ELECT 10uF 20% 16V
C56	1-161-021-11	s	CERAMIC 0.047uF 10% 25V
C57	1-126-157-11	s	ELECT 10uF 20% 16V
C58	1-107-159-00	s	MICA 33PF 5% 500V
C59	1-126-157-11	s	ELECT 10uF 20% 16V
C60	1-126-157-11	s	ELECT 10uF 20% 16V
C61	1-126-157-11	s	ELECT 10uF 20% 16V
C62	1-161-021-11	s	CERAMIC 0.047uF 10% 25V
C63	1-162-294-31	s	CERAMIC 0.001uF 10% 50V
C64	1-162-726-11	s	CERAMIC 470PF 1% 50V
C65	1-161-021-11	s	CERAMIC 0.047uF 10% 25V
C102	1-107-085-00	s	MICA 100PF 5% 50V
C103	1-131-341-00	s	TANTALUM 0.1uF 10% 35V
C104	1-162-726-11	s	CERAMIC 470PF 1% 50V
C105	1-130-491-00	s	MYLAR 0.047uF 5% 50V
C108	1-107-085-00	s	MICA 100PF 5% 50V
C109	1-130-499-00	s	MYLAR 0.22uF 5% 50V
C110	1-124-126-00	s	ELECT 47uF 20% 25V
C111	1-107-159-00	s	MICA 33PF 5% 500V
C113	1-107-085-00	s	MICA 100PF 5% 50V
C118	1-130-487-00	s	MYLAR 0.022uF 5% 50V
C119	1-124-360-00	s	ELECT 1000uF 20% 16V
C120	1-124-360-00	s	ELECT 1000uF 20% 16V
C200	1-161-494-00	s	CERAMIC 0.022uF 25V
C202	1-126-157-11	s	ELECT 10uF 20% 16V
C203	1-124-126-00	s	ELECT 47uF 20% 25V
C204	1-107-204-00	s	MICA 12PF 5% 500V
C205	1-126-157-11	s	ELECT 10uF 20% 16V
C206	1-126-157-11	s	ELECT 10uF 20% 16V
C210	1-124-360-00	s	ELECT 1000uF 20% 16V
C212	1-130-487-00	s	MYLAR 0.022uF 5% 50V

(VO-24 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C405	1-161-494-00	s	CERAMIC 0.022uF 25V
C406	1-107-202-00	s	MICA 10PF 5% 500V
C407	1-107-165-00	s	MICA 56PF 5% 50V
C426	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C427	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C428	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C429	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C430	1-161-494-00	s	CERAMIC 0.022uF 25V
C431	1-161-494-00	s	CERAMIC 0.022uF 25V
C433	1-161-494-00	s	CERAMIC 0.022uF 25V
C434	1-161-494-00	s	CERAMIC 0.022uF 25V
C437	1-107-165-00	s	MICA 56PF 5% 50V
C438	1-107-202-00	s	MICA 10PF 5% 500V
C440	1-161-494-00	s	CERAMIC 0.022uF 25V
C501	1-107-210-00	s	MICA 22PF 5% 500V
C502	1-107-085-00	s	MICA 100PF 5% 50V
C503	1-109-541-00	s	MICA 200PF 5% 100V
C504	1-109-627-00	s	MICA 150PF 2% 500V
C505	1-130-471-00	s	MYLAR 0.001uF 5% 50V
C507	1-161-494-00	s	CERAMIC 0.022uF 25V
C509	1-126-157-11	s	ELECT 10uF 20% 16V
C510	1-161-021-11	s	CERAMIC 0.047uF 10% 25V
C513	1-161-494-00	s	CERAMIC 0.022uF 25V
C514	1-161-494-00	s	CERAMIC 0.022uF 25V
C515	1-161-494-00	s	CERAMIC 0.022uF 25V
C516	1-130-471-00	s	MYLAR 0.001uF 5% 50V
C517	1-126-157-11	s	ELECT 10uF 20% 16V
C518	1-126-157-11	s	ELECT 10uF 20% 16V
C519	1-126-157-11	s	ELECT 10uF 20% 16V
C520	1-161-494-00	s	CERAMIC 0.022uF 25V
C523	1-126-157-11	s	ELECT 10uF 20% 16V
C524	1-126-157-11	s	ELECT 10uF 20% 16V
C529	1-161-494-00	s	CERAMIC 0.022uF 25V
CN303	1-506-471-11	s	CONNECTOR, 6P, MALE
CN310	1-506-471-11	s	CONNECTOR, 6P, MALE
CN312	1-506-471-11	s	CONNECTOR, 6P, MALE
CV500	1-141-246-00	s	CAP, TRIMMER 20PF
D1	8-719-101-97	s	DIODE 1SS97-1
D2	8-719-101-97	s	DIODE 1SS97-1
D3	8-719-101-97	s	DIODE 1SS97-1
D4	8-719-101-97	s	DIODE 1SS97-1
D100	8-719-110-13	s	DIODE RD9.1ES-B2
D101	8-719-911-19	s	DIODE 1SS119
D200	8-719-104-10	s	DIODE 1SS99
D201	8-719-104-10	s	DIODE 1SS99
D402	8-719-104-10	s	DIODE 1SS99
D403	8-719-104-10	s	DIODE 1SS99
D404	8-719-104-10	s	DIODE 1SS99
D405	8-719-104-10	s	DIODE 1SS99
D500	8-719-911-19	s	DIODE 1SS119
DL1	1-415-348-21	s	DELAY LINE 280NS
DL2	1-415-551-11	s	DELAY LINE 140NS
DL201	1-415-452-21	s	DELAY LINE 810NS
DL500	1-415-402-11	s	DELAY LINE 300nS
FL201	1-409-410-11	s	FILTER, TRAP 4.4MHz
FL500	1-236-041-11	s	FILTER, LOW-PASS

NOTE: Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

. For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

(VO-24 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
IC1	8-752-006-12	s	IC CX20061
IC2	8-759-206-29	s	IC TA7060AP-SONY
IC3	8-759-402-33	s	IC AN607P
IC4	8-752-201-30	s	IC CX22013
IC5	8-743-880-00	s	IC BX-388
IC6	8-743-890-00	s	IC BX-389
IC51	8-743-890-00	s	IC BX-389
IC52	8-759-206-29	s	IC TA7060AP-SONY
IC53	8-759-206-29	s	IC TA7060AP-SONY
IC100	8-759-201-47	s	IC TA7357AP
IC101	8-759-040-53	s	IC MC14053BCP
IC200	8-759-206-29	s	IC TA7060AP-SONY
IC403	8-759-206-29	s	IC TA7060AP-SONY
IC500	8-752-006-12	s	IC CX20061
IC501	8-759-982-21	s	IC RC78L05A
IC502	8-759-111-69	s	IC UPC1037HA
IC503	8-743-890-00	s	IC BX-389
IC504	8-752-006-12	s	IC CX20061
L1	1-410-482-31	s	INDUCTOR 100uH
L3	1-410-087-31	s	INDUCTOR 10mH
L4	1-410-087-31	s	INDUCTOR 10mH
L6	1-410-482-31	s	INDUCTOR 100uH
L7	1-410-464-11	s	INDUCTOR 3.3uH
L52	1-410-087-31	s	INDUCTOR 10mH
L102	1-410-482-31	s	INDUCTOR 100uH
L103	1-410-482-31	s	INDUCTOR 100uH
L203	1-410-087-31	s	INDUCTOR 10mH
L204	1-410-482-31	s	INDUCTOR 100uH
L400	1-410-482-31	s	INDUCTOR 100uH
L402	1-410-482-31	s	INDUCTOR 100uH
L404	1-410-482-31	s	INDUCTOR 100uH
L405	1-410-473-11	s	INDUCTOR 18uH
L407	1-410-470-11	s	INDUCTOR 10uH
L501	1-410-482-31	s	INDUCTOR 100uH
L502	1-410-482-31	s	INDUCTOR 100uH
L503	1-410-482-31	s	INDUCTOR 100uH
#Q1	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q2	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q4	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q5	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q6	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q7	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q8	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q9	8-729-900-89	s	TRANSISTOR DTC144ES
#Q10	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q11	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q12	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q51	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q52	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q53	8-729-900-89	s	TRANSISTOR DTC144ES
Q54	8-729-900-89	s	TRANSISTOR DTC144ES
Q55	8-729-900-89	s	TRANSISTOR DTC144ES
Q56	8-729-900-89	s	TRANSISTOR DTC144ES
#Q57	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q58	8-729-900-89	s	TRANSISTOR DTC144ES
#Q59	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q100	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q101	8-729-119-76	s	TRANSISTOR 2SA1115P
Q102	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q103	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q104	8-729-119-76	s	TRANSISTOR 2SA1115P
Q105	8-729-119-76	s	TRANSISTOR 2SA1115P
#Q106	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q107	8-729-281-53	s	TRANSISTOR 2SC1815-GR
Q108	8-729-119-76	s	TRANSISTOR 2SA1115P
Q109	8-729-281-53	s	TRANSISTOR 2SC1815-GR
#Q110	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q111	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q112	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q113	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q114	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q200	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q201	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q202	8-729-119-76	s	TRANSISTOR 2SA1115P
Q203	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q204	8-729-119-76	s	TRANSISTOR 2SA1115P
#Q205	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q206	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q207	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q208	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q209	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q210	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q211	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q400	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q401	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q409	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q410	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q411	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q412	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q413	8-729-900-89	s	TRANSISTOR DTC144ES
#Q414	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q500	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q501	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q502	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q503	8-729-201-05	s	TRANSISTOR 2SC2878-B
Q504	8-729-900-89	s	TRANSISTOR DTC144ES
Q505	8-729-900-89	s	TRANSISTOR DTC144ES
#Q506	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q509	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
R3	1-249-433-11	s	CARBON 22K 5% 1/4W
R4	1-249-429-11	s	CARBON 10K 5% 1/4W
R5	1-249-417-11	s	CARBON 1K 5% 1/4W
R6	1-215-411-00	s	METAL 390 1% 1/6W
R7	1-249-414-11	s	CARBON 560 5% 1/4W
R8	1-249-417-11	s	CARBON 1K 5% 1/4W
R9	1-249-413-11	s	CARBON 470 5% 1/4W
R10	1-249-409-11	s	CARBON 220 5% 1/4W
R11	1-249-416-11	s	CARBON 820 5% 1/4W
R12	1-249-417-11	s	CARBON 1K 5% 1/4W
R13	1-249-418-11	s	CARBON 1.2K 5% 1/4W
R14	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R15	1-215-405-00	s	METAL 220 1% 1/6W
R16	1-215-405-00	s	METAL 220 1% 1/6W
R20	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R21	1-249-430-11	s	CARBON 12K 5% 1/4W
R22	1-249-433-11	s	CARBON 22K 5% 1/4W

NOTE: Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

. For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

(VO-24 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R23	1-215-405-00	s	METAL 220 1% 1/6W
R25	1-215-405-00	s	METAL 220 1% 1/6W
R26	1-249-417-11	s	CARBON 1K 5% 1/4W
R27	1-249-416-11	s	CARBON 820 5% 1/4W
R28	1-249-413-11	s	CARBON 470 5% 1/4W
R29	1-249-429-11	s	CARBON 10K 5% 1/4W
R30	1-249-431-11	s	CARBON 15K 5% 1/4W
R31	1-215-405-00	s	METAL 220 1% 1/6W
R32	1-249-413-11	s	CARBON 470 5% 1/4W
R33	1-249-417-11	s	CARBON 1K 5% 1/4W
R34	1-249-410-11	s	CARBON 270 5% 1/4W
R35	1-249-405-11	s	CARBON 100 5% 1/4W
R36	1-215-438-00	s	METAL 5.1K 1% 1/6W
R37	1-215-394-00	s	METAL 75 1% 1/6W
R38	1-249-441-11	s	CARBON 100K 5% 1/4W
R39	1-249-437-11	s	CARBON 47K 5% 1/4W
R40	1-249-433-11	s	CARBON 22K 5% 1/4W
R41	1-249-417-11	s	CARBON 1K 5% 1/4W
R42	1-249-416-11	s	CARBON 820 5% 1/4W
R43	1-249-411-11	s	CARBON 330 5% 1/4W
R44	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R45	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R46	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R51	1-249-415-11	s	CARBON 680 5% 1/4W
R52	1-249-398-11	s	CARBON 27 5% 1/4W
R53	1-249-411-11	s	CARBON 330 5% 1/4W
R54	1-249-431-11	s	CARBON 15K 5% 1/4W
R55	1-249-429-11	s	CARBON 10K 5% 1/4W
R56	1-249-413-11	s	CARBON 470 5% 1/4W
R57	1-249-413-11	s	CARBON 470 5% 1/4W
R58	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R59	1-249-411-11	s	CARBON 330 5% 1/4W
R60	1-249-437-11	s	CARBON 47K 5% 1/4W
R61	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R62	1-249-433-11	s	CARBON 22K 5% 1/4W
R63	1-215-402-00	s	METAL 160 1% 1/6W
R64	1-249-418-11	s	CARBON 1.2K 5% 1/4W
R65	1-249-439-11	s	CARBON 68K 5% 1/4W
R66	1-249-413-11	s	CARBON 470 5% 1/4W
R67	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R68	1-249-422-11	s	CARBON 2.7K 5% 1/4W
R69	1-215-428-00	s	METAL 2K 1% 1/6W
R70	1-249-418-11	s	CARBON 1.2K 5% 1/4W
R100	1-249-409-11	s	CARBON 220 5% 1/4W
R101	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R102	1-249-429-11	s	CARBON 10K 5% 1/4W
R103	1-247-883-00	s	CARBON 150K 5% 1/4W
R104	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R105	1-247-895-00	s	CARBON 470K 5% 1/4W
R106	1-249-430-11	s	CARBON 12K 5% 1/4W
R107	1-249-413-11	s	CARBON 470 5% 1/4W
R108	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R110	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R111	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R112	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R113	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R114	1-215-419-00	s	METAL 820 1% 1/6W
R115	1-215-416-00	s	METAL 620 1% 1/6W
R116	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R117	1-249-406-11	s	CARBON 120 5% 1/4W
R118	1-249-406-11	s	CARBON 120 5% 1/4W
R119	1-249-424-11	s	CARBON 3.9K 5% 1/4W
R120	1-249-424-11	s	CARBON 3.9K 5% 1/4W
R121	1-249-417-11	s	CARBON 1K 5% 1/4W
R122	1-249-424-11	s	CARBON 3.9K 5% 1/4W
R123	1-249-417-11	s	CARBON 1K 5% 1/4W
R124	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R125	1-249-436-11	s	CARBON 39K 5% 1/4W
R126	1-249-429-11	s	CARBON 10K 5% 1/4W
R127	1-249-437-11	s	CARBON 47K 5% 1/4W
R128	1-249-429-11	s	CARBON 10K 5% 1/4W
R129	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R130	1-215-433-00	s	METAL 3.3K 1% 1/6W
R131	1-249-417-11	s	CARBON 1K 5% 1/4W
R132	1-249-433-11	s	CARBON 22K 5% 1/4W
R133	1-249-433-11	s	CARBON 22K 5% 1/4W
R134	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R135	1-249-429-11	s	CARBON 10K 5% 1/4W
R136	1-249-413-11	s	CARBON 470 5% 1/4W
R137	1-249-418-11	s	CARBON 1.2K 5% 1/4W
R138	1-249-417-11	s	CARBON 1K 5% 1/4W
R139	1-249-428-11	s	CARBON 8.2K 5% 1/4W
R140	1-249-429-11	s	CARBON 10K 5% 1/4W
R141	1-249-426-11	s	CARBON 5.6K 5% 1/4W
R142	1-249-405-11	s	CARBON 100 5% 1/4W
R143	1-249-422-11	s	CARBON 2.7K 5% 1/4W
R144	1-249-429-11	s	CARBON 10K 5% 1/4W
R145	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R146	1-249-401-11	s	CARBON 47 5% 1/4W
R147	1-249-401-11	s	CARBON 47 5% 1/4W
R148	1-249-437-11	s	CARBON 47K 5% 1/4W
R149	1-215-394-00	s	METAL 75 1% 1/6W
R150	1-215-394-00	s	METAL 75 1% 1/6W
R151	1-247-903-00	s	CARBON 1M 5% 1/4W
R152	1-249-441-11	s	CARBON 100K 5% 1/4W
R153	1-249-441-11	s	CARBON 100K 5% 1/4W
R200	1-249-433-11	s	CARBON 22K 5% 1/4W
R201	1-249-432-11	s	CARBON 18K 5% 1/4W
R203	1-215-408-00	s	METAL 300 1% 1/6W
R204	1-215-408-00	s	METAL 300 1% 1/6W
R206	1-249-417-11	s	CARBON 1K 5% 1/4W
R207	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R208	1-215-414-00	s	METAL 510 1% 1/6W
R209	1-249-433-11	s	CARBON 22K 5% 1/4W
R210	1-249-433-11	s	CARBON 22K 5% 1/4W
R211	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R212	1-215-423-00	s	METAL 1.2K 1% 1/6W
R213	1-249-414-11	s	CARBON 560 5% 1/4W
R214	1-215-421-00	s	METAL 1K 1% 1/6W
R215	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R216	1-215-431-00	s	METAL 2.7K 1% 1/6W
R217	1-215-408-00	s	METAL 300 1% 1/6W
R218	1-249-417-11	s	CARBON 1K 5% 1/4W
R219	1-249-429-11	s	CARBON 10K 5% 1/4W
R220	1-249-417-11	s	CARBON 1K 5% 1/4W
R221	1-249-418-11	s	CARBON 1.2K 5% 1/4W
R222	1-249-417-11	s	CARBON 1K 5% 1/4W
R223	1-249-429-11	s	CARBON 10K 5% 1/4W

NOTE: Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

. For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

(VO-24 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R224	1-249-428-11	s	CARBON 8.2K 5% 1/4W
R225	1-249-426-11	s	CARBON 5.6K 5% 1/4W
R226	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R227	1-249-405-11	s	CARBON 100 5% 1/4W
R228	1-249-429-11	s	CARBON 10K 5% 1/4W
R229	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R230	1-249-401-11	s	CARBON 47 5% 1/4W
R231	1-249-401-11	s	CARBON 47 5% 1/4W
R232	1-215-390-00	s	METAL 51 1% 1/6W
R234	1-249-405-11	s	CARBON 100 5% 1/4W
R401	1-249-433-11	s	CARBON 22K 5% 1/4W
R402	1-249-433-11	s	CARBON 22K 5% 1/4W
R403	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R405	1-249-433-11	s	CARBON 22K 5% 1/4W
R406	1-249-433-11	s	CARBON 22K 5% 1/4W
R407	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R435	1-249-405-11	s	CARBON 100 5% 1/4W
R436	1-249-422-11	s	CARBON 2.7K 5% 1/4W
R437	1-249-418-11	s	CARBON 1.2K 5% 1/4W
R438	1-249-413-11	s	CARBON 470 5% 1/4W
R439	1-215-432-00	s	METAL 3K 1% 1/6W
R440	1-249-415-11	s	CARBON 680 5% 1/4W
R441	1-249-417-11	s	CARBON 1K 5% 1/4W
R442	1-249-417-11	s	CARBON 1K 5% 1/4W
R443	1-249-429-11	s	CARBON 10K 5% 1/4W
R444	1-249-426-11	s	CARBON 5.6K 5% 1/4W
R445	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R446	1-249-409-11	s	CARBON 220 5% 1/4W
R447	1-249-409-11	s	CARBON 220 5% 1/4W
R448	1-249-417-11	s	CARBON 1K 5% 1/4W
R449	1-249-417-11	s	CARBON 1K 5% 1/4W
R450	1-247-822-11	s	CARBON 430 5% 1/4W
R451	1-249-417-11	s	CARBON 1K 5% 1/4W
R452	1-249-437-11	s	CARBON 47K 5% 1/4W
R453	1-215-421-00	s	METAL 1K 1% 1/6W
R454	1-215-420-00	s	METAL 910 1% 1/6W
R455	1-215-416-00	s	METAL 620 1% 1/6W
R500	1-249-431-11	s	CARBON 15K 5% 1/4W
R501	1-249-431-11	s	CARBON 15K 5% 1/4W
R502	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R503	1-249-422-11	s	CARBON 2.7K 5% 1/4W
R504	1-249-432-11	s	CARBON 18K 5% 1/4W
R506	1-249-416-11	s	CARBON 820 5% 1/4W
R507	1-249-429-11	s	CARBON 10K 5% 1/4W
R508	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R509	1-215-414-00	s	METAL 510 1% 1/6W
R510	1-215-414-00	s	METAL 510 1% 1/6W
R511	1-249-417-11	s	CARBON 1K 5% 1/4W
R512	1-249-417-11	s	CARBON 1K 5% 1/4W
R513	1-249-411-11	s	CARBON 330 5% 1/4W
R514	1-249-417-11	s	CARBON 1K 5% 1/4W
R515	1-249-417-11	s	CARBON 1K 5% 1/4W
R516	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R517	1-249-437-11	s	CARBON 47K 5% 1/4W
R518	1-249-437-11	s	CARBON 47K 5% 1/4W
R519	1-249-429-11	s	CARBON 10K 5% 1/4W
R520	1-249-441-11	s	CARBON 100K 5% 1/4W
R521	1-249-403-11	s	CARBON 68 5% 1/4W
R522	1-249-421-11	s	CARBON 2.2K 5% 1/4W

(VO-24 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R523	1-249-429-11	s	CARBON 10K 5% 1/4W
R524	1-249-429-11	s	CARBON 10K 5% 1/4W
R525	1-249-429-11	s	CARBON 10K 5% 1/4W
R526	1-249-433-11	s	CARBON 22K 5% 1/4W
R527	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R529	1-249-436-11	s	CARBON 39K 5% 1/4W
R536	1-249-429-11	s	CARBON 10K 5% 1/4W
R537	1-249-429-11	s	CARBON 10K 5% 1/4W
R538	1-249-433-11	s	CARBON 22K 5% 1/4W
R539	1-249-433-11	s	CARBON 22K 5% 1/4W
R540	1-249-405-11	s	CARBON 100 5% 1/4W
R541	1-249-441-11	s	CARBON 100K 5% 1/4W
R558	1-249-425-11	s	CARBON 4.7K 5% 1/4W
RV1	1-228-991-00	s	RES, ADJ, METAL 2.2K
RV2	1-228-994-00	s	RES, ADJ, METAL 10K
RV3	1-228-991-00	s	RES, ADJ, METAL 2.2K
RV4	1-228-991-00	s	RES, ADJ, METAL 2.2K
RV5	1-228-990-00	s	RES, ADJ, METAL 1K
RV51	1-228-990-00	s	RES, ADJ, METAL 1K
RV52	1-228-990-00	s	RES, ADJ, METAL 1K
RV100	1-228-993-00	s	RES, ADJ, METAL 4.7K
RV101	1-228-991-00	s	RES, ADJ, METAL 2.2K
RV201	1-228-990-00	s	RES, ADJ, METAL 1K
RV404	1-228-991-00	s	RES, ADJ, METAL 2.2K
RV501	1-228-989-00	s	RES, ADJ, METAL 470
X500	1-527-377-00	s	CRYSTAL 4.267919MHz

NOTE: Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

. For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

YC-39 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7061-777-A	o	MOUNTED CIRCUIT BOARD, YC-39
C1	1-161-494-00	s	CERAMIC 0.022uF 25V
C2	1-124-638-11	s	ELECT 22uF 20% 10V
C3	1-126-157-11	s	ELECT 10uF 20% 16V
C4	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C5	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C6	1-124-638-11	s	ELECT 22uF 20% 10V
C7	1-124-638-11	s	ELECT 22uF 20% 10V
C8	1-107-074-00	s	MICA 36PF 5% 50V
C9	1-107-075-00	s	MICA 39PF 5% 50V
C10	1-107-165-00	s	MICA 56PF 5% 50V
C11	1-126-176-11	s	ELECT 220uF 20% 10V
C12	1-124-638-11	s	ELECT 22uF 20% 10V
C13	1-162-722-11	s	CERAMIC 330PF 1% 50V
C14	1-107-083-00	s	MICA 82PF 5% 50V
C15	1-107-083-00	s	MICA 82PF 5% 50V
C16	1-126-154-11	s	ELECT 47uF 20% 6.3V
C17	1-161-494-00	s	CERAMIC 0.022uF 25V
C18	1-161-494-00	s	CERAMIC 0.022uF 25V
C20	1-161-494-00	s	CERAMIC 0.022uF 25V
C22	1-109-542-00	s	MICA 220PF 5% 100V
C23	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C24	1-161-494-00	s	CERAMIC 0.022uF 25V
C25	1-161-494-00	s	CERAMIC 0.022uF 25V
C26	1-107-206-00	s	MICA 15PF 5% 500V
C27	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C28	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C29	1-126-163-11	s	ELECT 4.7MF 20% 50V
C30	1-107-085-00	s	MICA 100PF 5% 50V
C31	1-161-494-00	s	CERAMIC 0.022uF 25V
C32	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C33	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C34	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C35	1-161-494-00	s	CERAMIC 0.022uF 25V
C36	1-126-163-11	s	ELECT 4.7MF 20% 50V
C37	1-107-087-00	s	MICA 120PF 5% 50V
C38	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C39	1-161-494-00	s	CERAMIC 0.022uF 25V
C40	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C41	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C42	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C43	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
C44	1-161-494-00	s	CERAMIC 0.022uF 25V
C45	1-126-154-11	s	ELECT 47uF 20% 6.3V
C46	1-161-494-00	s	CERAMIC 0.022uF 25V
C47	1-130-495-00	s	MYLAR 0.1uF 5% 50V
C48	1-130-495-00	s	MYLAR 0.1uF 5% 50V
C49	1-107-157-00	s	MICA 27PF 5% 500V
C50	1-107-157-00	s	MICA 27PF 5% 500V
C51	1-161-494-00	s	CERAMIC 0.022uF 25V
C59	1-161-494-00	s	CERAMIC 0.022uF 25V
C60	1-161-494-00	s	CERAMIC 0.022uF 25V
C61	1-161-494-00	s	CERAMIC 0.022uF 25V
C62	1-107-210-00	s	MICA 22PF 5% 500V
#C63	1-107-157-00	s	MICA 27PF 5% 500V
C64	1-124-638-11	s	ELECT 22uF 20% 10V
C65	1-126-154-11	s	ELECT 47uF 20% 6.3V

(YC-39 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
D1	8-719-911-19	s	DIODE 1SS119
D2	8-719-911-19	s	DIODE 1SS119
DL1	1-415-342-00	s	DELAY LINE 1H
DL2	1-415-342-00	s	DELAY LINE 1H
FL1	1-235-779-11	s	FILTER, LOW-PASS
FL2	1-236-564-11	s	FILTER, LOW-PASS 5.5MHz
FL3	1-236-563-11	s	FILTER, BAND PASS 3.58MHz
IC1	8-759-014-96	s	IC MC1496P
IC2	8-759-014-96	s	IC MC1496P
IC3	8-759-982-31	s	IC RC78M05FA
IC4	8-752-006-12	s	IC CX20061
L3	1-410-473-11	s	INDUCTOR 18uH
L5	1-410-476-11	s	INDUCTOR 33uH
L7	1-410-482-31	s	INDUCTOR 100uH
L10	1-410-473-11	s	INDUCTOR 18uH
L13	1-410-482-31	s	INDUCTOR 100uH
L14	1-410-482-31	s	INDUCTOR 100uH
L16	1-410-482-31	s	INDUCTOR 100uH
LV1	1-408-520-00	s	COIL, VAR 15UH
LV2	1-408-520-00	s	COIL, VAR 15UH
#Q1	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q2	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q3	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q4	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q5	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q6	8-729-119-76	s	TRANSISTOR 2SA1115P
#Q7	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q8	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q9	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q10	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q11	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q12	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q13	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q14	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q15	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q16	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q17	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q18	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q19	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q20	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q21	8-729-119-76	s	TRANSISTOR 2SA1115P
#Q22	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q23	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q24	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q25	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q26	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q27	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q28	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q29	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q30	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q31	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q32	8-729-119-76	s	TRANSISTOR 2SA1115P
#Q33	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
Q34	8-729-119-76	s	TRANSISTOR 2SA1115P
#Q35	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
#Q36	8-729-119-78	s	TRANSISTOR 2SC2785-HFE

NOTE: Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

. For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

(YC-39 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R1	1-249-432-11	s	CARBON 18K 5% 1/4W
R2	1-249-431-11	s	CARBON 15K 5% 1/4W
R3	1-249-413-11	s	CARBON 470 5% 1/4W
R4	1-249-433-11	s	CARBON 22K 5% 1/4W
R5	1-249-431-11	s	CARBON 15K 5% 1/4W
R6	1-249-415-11	s	CARBON 680 5% 1/4W
R7	1-249-414-11	s	CARBON 560 5% 1/4W
R8	1-249-415-11	s	CARBON 680 5% 1/4W
R9	1-249-415-11	s	CARBON 680 5% 1/4W
R10	1-215-410-00	s	METAL 360 1% 1/6W
R11	1-249-414-11	s	CARBON 560 5% 1/4W
R12	1-249-417-11	s	CARBON 1K 5% 1/4W
R13	1-249-417-11	s	CARBON 1K 5% 1/4W
R14	1-249-432-11	s	CARBON 18K 5% 1/4W
R15	1-249-431-11	s	CARBON 15K 5% 1/4W
R16	1-249-417-11	s	CARBON 1K 5% 1/4W
R17	1-249-418-11	s	CARBON 1.2K 5% 1/4W
R18	1-249-432-11	s	CARBON 18K 5% 1/4W
R19	1-249-431-11	s	CARBON 15K 5% 1/4W
R20	1-249-417-11	s	CARBON 1K 5% 1/4W
R22	1-249-419-11	s	CARBON 1.5K 5% 1/4W
R23	1-249-413-11	s	CARBON 470 5% 1/4W
R24	1-249-417-11	s	CARBON 1K 5% 1/4W
R25	1-215-415-00	s	METAL 560 1% 1/6W
R26	1-215-415-00	s	METAL 560 1% 1/6W
R27	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R28	1-249-429-11	s	CARBON 10K 5% 1/4W
R29	1-249-416-11	s	CARBON 820 5% 1/4W
R30	1-249-413-11	s	CARBON 470 5% 1/4W
R31	1-249-413-11	s	CARBON 470 5% 1/4W
R32	1-249-417-11	s	CARBON 1K 5% 1/4W
R33	1-249-411-11	s	CARBON 330 5% 1/4W
R34	1-215-406-00	s	METAL 240 1% 1/6W
R35	1-249-409-11	s	CARBON 220 5% 1/4W
R36	1-249-411-11	s	CARBON 330 5% 1/4W
R37	1-249-417-11	s	CARBON 1K 5% 1/4W
R38	1-215-420-00	s	METAL 910 1% 1/6W
R40	1-249-429-11	s	CARBON 10K 5% 1/4W
R41	1-249-417-11	s	CARBON 1K 5% 1/4W
R42	1-249-411-11	s	CARBON 330 5% 1/4W
R43	1-249-417-11	s	CARBON 1K 5% 1/4W
R44	1-249-415-11	s	CARBON 680 5% 1/4W
R46	1-249-415-11	s	CARBON 680 5% 1/4W
R47	1-249-416-11	s	CARBON 820 5% 1/4W
R48	1-249-416-11	s	CARBON 820 5% 1/4W
R49	1-249-416-11	s	CARBON 820 5% 1/4W
R50	1-249-416-11	s	CARBON 820 5% 1/4W
R51	1-249-426-11	s	CARBON 5.6K 5% 1/4W
R52	1-249-430-11	s	CARBON 12K 5% 1/4W
R53	1-249-417-11	s	CARBON 1K 5% 1/4W
R54	1-249-413-11	s	CARBON 470 5% 1/4W
R55	1-249-413-11	s	CARBON 470 5% 1/4W
R56	1-249-418-11	s	CARBON 1.2K 5% 1/4W
R57	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R58	1-249-429-11	s	CARBON 10K 5% 1/4W
R59	1-249-428-11	s	CARBON 8.2K 5% 1/4W
R60	1-249-414-11	s	CARBON 560 5% 1/4W
R61	1-249-414-11	s	CARBON 560 5% 1/4W

(YC-39 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R62	1-249-415-11	s	CARBON 680 5% 1/4W
R63	1-249-415-11	s	CARBON 680 5% 1/4W
R64	1-249-413-11	s	CARBON 470 5% 1/4W
R65	1-249-413-11	s	CARBON 470 5% 1/4W
R66	1-249-418-11	s	CARBON 1.2K 5% 1/4W
R67	1-249-420-11	s	CARBON 1.8K 5% 1/4W
R68	1-249-415-11	s	CARBON 680 5% 1/4W
R69	1-249-432-11	s	CARBON 18K 5% 1/4W
R70	1-249-434-11	s	CARBON 27K 5% 1/4W
R71	1-249-415-11	s	CARBON 680 5% 1/4W
R72	1-249-415-11	s	CARBON 680 5% 1/4W
R73	1-249-429-11	s	CARBON 10K 5% 1/4W
R74	1-249-429-11	s	CARBON 10K 5% 1/4W
R75	1-249-418-11	s	CARBON 1.2K 5% 1/4W
R76	1-249-417-11	s	CARBON 1K 5% 1/4W
R77	1-249-415-11	s	CARBON 680 5% 1/4W
R78	1-249-432-11	s	CARBON 18K 5% 1/4W
R79	1-249-431-11	s	CARBON 15K 5% 1/4W
R80	1-249-432-11	s	CARBON 18K 5% 1/4W
R81	1-249-434-11	s	CARBON 27K 5% 1/4W
R82	1-249-415-11	s	CARBON 680 5% 1/4W
R83	1-249-415-11	s	CARBON 680 5% 1/4W
R84	1-249-429-11	s	CARBON 10K 5% 1/4W
R85	1-249-429-11	s	CARBON 10K 5% 1/4W
R86	1-249-433-11	s	CARBON 22K 5% 1/4W
R87	1-249-420-11	s	CARBON 1.8K 5% 1/4W
R88	1-249-417-11	s	CARBON 1K 5% 1/4W
R89	1-249-434-11	s	CARBON 27K 5% 1/4W
R90	1-249-430-11	s	CARBON 12K 5% 1/4W
R91	1-249-427-11	s	CARBON 6.8K 5% 1/4W
R92	1-249-430-11	s	CARBON 12K 5% 1/4W
R93	1-249-430-11	s	CARBON 12K 5% 1/4W
R94	1-249-433-11	s	CARBON 22K 5% 1/4W
R95	1-249-422-11	s	CARBON 2.7K 5% 1/4W
R96	1-249-424-11	s	CARBON 3.9K 5% 1/4W
R97	1-249-427-11	s	CARBON 6.8K 5% 1/4W
R98	1-249-430-11	s	CARBON 12K 5% 1/4W
R99	1-249-429-11	s	CARBON 10K 5% 1/4W
R100	1-249-429-11	s	CARBON 10K 5% 1/4W
R101	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R102	1-215-412-00	s	METAL 430 1% 1/6W
R103	1-249-413-11	s	CARBON 470 5% 1/4W
R104	1-249-417-11	s	CARBON 1K 5% 1/4W
R105	1-249-429-11	s	CARBON 10K 5% 1/4W
R106	1-249-431-11	s	CARBON 15K 5% 1/4W
R107	1-249-417-11	s	CARBON 1K 5% 1/4W
R108	1-249-417-11	s	CARBON 1K 5% 1/4W
R109	1-215-421-00	s	METAL 1K 1% 1/6W
R110	1-215-422-00	s	METAL 1.1K 1% 1/6W
R111	1-215-421-00	s	METAL 1K 1% 1/6W
R112	1-249-437-11	s	CARBON 47K 5% 1/4W
R113	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R114	1-215-421-00	s	METAL 1K 1% 1/6W
R115	1-249-431-11	s	CARBON 15K 5% 1/4W
R116	1-215-421-00	s	METAL 1K 1% 1/6W
R117	1-249-418-11	s	CARBON 1.2K 5% 1/4W
R118	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R120	1-249-421-11	s	CARBON 2.2K 5% 1/4W
R121	1-249-418-11	s	CARBON 1.2K 5% 1/4W

NOTE: Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

. For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

(YC-39 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R122	1-249-409-11	s	CARBON 220 5% 1/4W
R123	1-249-415-11	s	CARBON 680 5% 1/4W
R124	1-249-415-11	s	CARBON 680 5% 1/4W
R125	1-249-418-11	s	CARBON 1.2K 5% 1/4W
R126	1-249-432-11	s	CARBON 18K 5% 1/4W
R127	1-249-431-11	s	CARBON 15K 5% 1/4W
R128	1-249-420-11	s	CARBON 1.8K 5% 1/4W
R129	1-249-405-11	s	CARBON 100 5% 1/4W
R131	1-215-421-00	s	METAL 1K 1% 1/6W
R132	1-249-413-11	s	CARBON 470 5% 1/4W
R133	1-249-417-11	s	CARBON 1K 5% 1/4W
R134	1-249-417-11	s	CARBON 1K 5% 1/4W
R135	1-249-429-11	s	CARBON 10K 5% 1/4W
RV1	1-228-989-00	s	RES, ADJ, METAL 470
RV3	1-228-990-00	s	RES, ADJ, METAL 1K
RV4	1-228-989-00	s	RES, ADJ, METAL 470
RV5	1-228-991-00	s	RES, ADJ, METAL 2.2K

FRAME

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7048-417-A	s	DRUM ASS'Y, DGH-35B-R
1pc	A-7049-351-A	s	DRUM ASS'Y, DGR-35B-R
1pc	1-535-535-11	s	TERMINAL, SHAFT GROUND
1pc	1-555-724-00	o	WIRE, GROUND
C901	1-161-057-00	s	CERAMIC 0.033uF 10% 50V
C1001	1-161-057-00	s	CERAMIC 0.033uF 10% 50V
CN1001	1-561-577-21	s	CONNECTOR, 8P, FEMALE "MONITOR TV"
CN1002	1-507-467-00	s	JACK, PIN 1P, FEMALE "MONITOR, AUDIO"
CN1003	1-562-227-21	s	CONNECTOR, BNC, FEMALE "MONITOR VIDEO"
CN1004	1-562-227-21	s	CONNECTOR, BNC, FEMALE "VIDEO IN"
CN1005	1-562-227-21	s	CONNECTOR, BNC, FEMALE "SYNC IN"
CN1006	1-562-227-21	s	CONNECTOR, BNC, FEMALE "VIDEO OUT"
CN1007	1-563-029-21	s	CONNECTOR, XLR 3P, FEMALE "AUDIO LINE IN CH-1/L"
CN1008	1-563-029-21	s	CONNECTOR, XLR 3P, FEMALE "AUDIO LINE IN CH-2/R"
CN1009	1-507-797-21	s	JACK, LARGE TYPE 2P
CN1011	1-507-854-00	s	JACK, PHONE "HEADPHONES"
CN1012	1-563-030-21	s	CONNECTOR, XLR 3P, MALE "AUDIO LINE OUT CH-1/L"
CN1013	1-563-030-21	s	CONNECTOR, XLR 3P, MALE "AUDIO LINI OUT CH-2/R"
CN1014	1-561-045-00	s	CONNECTOR, RF, FEMALE "DUB OUT"
CN1016	⚠1-560-222-11	s	INLET, AC 3P, MALE "AC IN"
CS1001	1-806-682-51	s	SENSOR, CONDENSATION
M1002	8-835-304-11	s	MOTOR, DC U-11B "REEL"
M1003	8-835-364-01	s	MOTOR, DC BHF-2802B "CAPSTAN"
M1005	8-835-138-01	s	MOTOR, DC (DNR-5301B)
M1006	1-541-360-21	s	MOTOR, FAN
ME1001	1-520-506-11	s	METER AUDIO LEVEL CH-1
ME1002	1-520-506-11	s	METER AUDIO LEVEL CH-2
PM1001	⚠1-454-377-31	s	SOLENOID "BRAKE"
S1001	⚠1-570-117-41	s	SWITCH, ROCKER "POWER"
S1002	1-553-226-00	s	SWITCH, LEAF "CASSETTE DOWN"
S1003	1-570-407-11	s	SWITCH, SLIDE "CASSETTE IN"
S1010	1-572-298-21	s	SWITCH, PUSH (3 KEY) "REC PROOF/MPHG/ME/MP"

NOTE: Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

. For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

14-4. PACKING MATERIAL AND ACCESSORIES

Ref. No. or Q'ty	Part No.	SP	Description
1	⚠1-551-812-00	s	CORD, POWER 3P
1	3-701-648-00	s	BAG, POLYETHYLENE
1	3-738-942-01	o	CUSHION (LOWER)
1	3-738-943-01	o	CUSHION (UPPER)
1	3-738-952-01	o	SPACER
1	3-738-953-01	o	INDIVIDUAL CARTON
1	⚠3-750-690-22	s	MANUAL, INSTRUCTION

14-5. FIXTURE (OPTION)

Part No.	SP	Description
J-6080-823-A	o	NO.10 GEAR PHASE TOOL
J-6080-824-A	o	FWD,RVS WINDING TORQUE CASSETTE
J-6080-825-A	o	MODE SELECTOR
J-6080-826-A	o	NO.6 GUIDE LOCK SECREWDRIVER
J-6080-827-A	o	DIAL TENSION GAUGE
J-6080-831-A	o	TENSION MEASUREMENT REEL
J-6080-832-A	o	TENSION MEASUREMENT REEL
J-6080-840-A	o	SMALL ADJUSTMENT MIRROR
J-6080-883-A	o	RF/SWP CONNECTOR
J-6080-884-A	o	CTL CONNECTOR
J-6080-891-A	o	TRACK SHIFT TOOL
Y-2031-001-1	o	CLEANING FLUID
2-034-697-00	o	CHAMOIS CLOTH
7-700-766-01	o	HEXAGONAL SCREWDRIVER (0.89 mm)
8-967-992-12	o	ALIGNMENT TAPE, WR2-3NS
8-967-995-02	o	ALIGNMENT TAPE, WR5-1NP
8-967-995-13	o	ALIGNMENT TAPE, WR5-7NE
8-967-995-42	o	ALIGNMENT TAPE, WR5-5NSP
8-967-995-43	o	ALIGNMENT TAPE, WR5-8NSE
8-967-995-52	o	ALIGNMENT TAPE, WR5-8NLE

NOTE: Please see pages 14-27 through 14-30 for parts that are not listed in the parts list.

. For the # marked parts in the parts list, refer to Section 15 CHANGED PARTS.

SECTION 15
CHANGED PART

Changed Parts List

NOTE: The numbers identified by making with) are matching with each serial numbers.

905) Serial No.10041 and highter
907) Serial No.10341 and highter
908) Serial No.10541 and highter
910) Serial No.10741 and highter
912) Serial No.10871 and highter

001) Serial No.11071 and highter
002) Serial No.11271 and highter
003) Serial No.11671 and highter
006) Serial No.11871 and highter
007) Serial No.12021 and highter

AU-127 BOARD

OLD)	IC101	8-759-700-62	s	IC NJM4562D
006)	IC101	8-759-981-96	s	IC RC4560D
OLD)	IC102	8-759-700-62	s	IC NJM4562D
006)	IC102	8-759-981-96	s	IC RC4560D
OLD)	IC201	8-759-700-62	s	IC NJM4562D
006)	IC201	8-759-981-96	s	IC RC4560D
OLD)	IC351	8-759-700-62	s	IC NJM4562D
006)	IC351	8-759-981-96	s	IC RC4560D
OLD)	IC401	8-759-700-62	s	IC NJM4562D
006)	IC401	8-759-981-96	s	IC RC4560D
OLD)	IC501	8-759-700-62	s	IC NJM4562D
006)	IC501	8-759-981-96	s	IC RC4560D
OLD)	IC603	8-759-700-62	s	IC NJM4562D
006)	IC603	8-759-981-96	s	IC RC4560D
OLD)	Q901	8-729-231-55	s	TRANSISTOR, 2SC2878-AB
907)	Q901	8-729-201-05	s	TRANSISTOR 2SC2878-B

DC-45 BOARD

OLD)	4pcs	7-682-903-01	s	SCREW +PWH 3X5
908)	4pcs	2pcs		
OLD)	F4	⚠1-532-765-21	s	FUSE, 0.08A 125V
912)	F4	⚠1-532-775-11	s	FUSE 0.8A 125V
OLD)	L2	1-410-087-31	s	INDUCTOR 10mH
905)	L2	1-410-064-11	s	INDUCTOR 2.7mH
OLD)	R14	1-214-804-51	s	METAL 3.3 1% 1/2W
002)	R14	1-214-804-11	s	METAL 3.3 1% 1/2W

DD-12 BOARD

OLD)	1pc	NOT IN USE.		
904)	1pc	1-535-699-11	s	CABLE, JUMPER 23P

DP-101 BOARD

904)	1pc	DELETED.		
OLD)	D1	8-719-942-19	s	LED LB402VK
006)	D1	DELETED.		
OLD)	D2	8-719-942-19	s	LED LB402VK
006)	D2	DELETED.		
OLD)	D3	8-719-942-19	s	LED LB402VK

(DP-101 BOARD)

006)	D3	DELETED.		
OLD)	D4	8-719-942-19	s	LED LB402VK
006)	D4	DELETED.		
OLD)	D101	NOT IN USE.		
006)	D101	8-719-942-19	s	LED LB402VK
OLD)	D102	NOT IN USE.		
006)	D102	8-719-942-19	s	LED LB402VK
OLD)	D103	NOT IN USE.		
006)	D103	8-719-942-19	s	LED LB402VK
OLD)	D104	NOT IN USE.		
006)	D104	8-719-942-19	s	LED LB402VK

HK-4 BOARD

OLD)	C318	1-162-721-11	s	CERAMIC 300PF 1% 50V
001)	C318	1-164-491-11	s	CERAMIC 300PF 5% 50V
OLD)	C419	1-162-721-11	s	CERAMIC 300PF 1% 50V
001)	C419	1-164-491-11	s	CERAMIC 300PF 5% 50V
OLD)	C426	1-163-097-00	s	CERAMIC, CHIP 15PF 5% 50V
905)	C426	DELETED.		
OLD)	C813	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
001)	C813	1-163-133-00	s	CERAMIC, CHIP 470PF 5% 50V
OLD)	D109	NOT IN USE.		
907)	D109	8-719-911-19	s	DIODE 1SS119
OLD)	D405	NOT IN USE.		
905)	D405	8-719-911-19	s	DIODE 1SS119
OLD)	Q901	8-729-901-05	s	TRANSISTOR DTA124EK
905)	Q901	8-729-901-00	s	TRANSISTOR DTC124EK
OLD)	Q905	8-729-901-05	s	TRANSISTOR DTA124EK
905)	Q905	DELETED.		
OLD)	R133	NOT IN USE.		
907)	R133	1-249-421-11	s	CARBON 2.2K 5% 1/4W
OLD)	R487	1-216-295-00	s	METAL, CHIP 0-OHM
907)	R487	DELETED		
OLD)	R488	NOT IN USE.		
907)	R488	1-216-295-00	s	METAL, CHIP 0-OHM
OLD)	R642	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
905)	R642	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
OLD)	R901	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
905)	R901	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
OLD)	R915	NOT IN USE.		
905)	R915	1-216-295-00	s	METAL, CHIP 0-OHM

KY-162 BOARD

OLD)	R98	1-249-403-11	s	CARBON 68 5% 1/4W
907)	R98	1-249-401-11	s	CARBON 47 5% 1/4W
OLD)	R99	1-249-403-11	s	CARBON 68 5% 1/4W
907)	R99	1-249-401-11	s	CARBON 47 5% 1/4W

MB-19 BOARD

OLD)	1pc	NOT IN USE.		
001)	1pc	4-911-047-01	o	VIBRATION CONTROL (D)
OLD)	IC601	8-759-146-57	s	IC, UPD75106G-589-1B
001)	IC601	8-759-149-34	s	IC UPD75106G-591-1B
OLD)	R635	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
007)	R635	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
OLD)	R649	1-216-059-00	s	METAL, CHIP 2.7K 5% 1/10W
001)	R649	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
OLD)	S641	1-570-909-21	s	SWITCH, PUSH
001)	S641	1-554-371-51	s	SWITCH, TACTILE
OLD)	S642	1-570-909-21	s	SWITCH, PUSH
001)	S642	1-554-371-51	s	SWITCH, TACTILE
OLD)	S643	1-570-909-21	s	SWITCH, PUSH
001)	S643	1-554-371-51	s	SWITCH, TACTILE
OLD)	S644	1-570-909-21	s	SWITCH, PUSH
001)	S644	1-554-371-51	s	SWITCH, TACTILE
OLD)	S645	1-570-909-21	s	SWITCH, PUSH
001)	S645	1-554-371-51	s	SWITCH, TACTILE
OLD)	S646	1-570-909-21	s	SWITCH, PUSH
001)	S646	1-554-371-51	s	SWITCH, TACTILE
OLD)	S647	1-570-909-21	s	SWITCH, PUSH
001)	S647	1-554-371-51	s	SWITCH, TACTILE
OLD)	S649	1-570-909-21	s	SWITCH, PUSH
001)	S649	1-554-371-51	s	SWITCH, TACTILE

MD-23 BOARD

OLD)	C809	1-126-096-11	s	ELECT 10uF 20% 35V
907)	C809	1-124-584-00	s	ELECT 100uF 20% 10V
OLD)	C834	1-163-012-00	s	CERAMIC 0.0018uF 10% 50V
907)	C834	1-163-017-00	s	CERAMIC, CHIP 0.0047uF 5% 5
OLD)	R889	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
905)	R889	DELETED.		

PD-19 BOARD

OLD)	C867	1-164-232-11	s	CERAMIC CHIP 0.01uF 10% 100
002)	C867	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
OLD)	C868	1-163-099-00	s	CERAMIC, CHIP 18PF 5% 50V
002)	C868	1-163-109-00	s	CERAMIC, CHIP 47PF 5% 50V
OLD)	C869	1-163-101-00	s	CERAMIC, CHIP 22PF 5% 50V
002)	C869	1-163-093-00	s	CERAMIC, CHIP 10PF 5% 50V
OLD)	C870	1-163-109-00	s	CERAMIC, CHIP 47PF 5% 50V
002)	C870	1-163-115-00	s	CERAMIC, CHIP 82PF 5% 50V
OLD)	C873	1-135-156-21	s	TANTALUM 6.8uF 10% 10V
002)	C873	1-135-157-21	s	TANTALUM 10uF 10% 6.3V
OLD)	R860	1-216-074-00	s	METAL CHIP 11K 10% 1/10W
003)	R860	1-216-071-00	s	METAL, CHIP 8.2K 5% 1/10W
OLD)	R867	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
003)	R867	1-216-295-00	s	METAL, CHIP 0-OHM
OLD)	R873	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
001)	R873	1-216-041-00	s	METAL, CHIP 470 5% 1/10W

RS-31 BOARD

OLD)	PS301	NOT IN USE.		
905)	PS301	1-532-727-11	s	LINK, IC 0.25A
OLD)	R303	1-216-180-00	s	METAL, CHIP 180 5% 1/8W
905)	R303	1-216-186-00	s	METAL 330 5% 1/8W

SE-10 BOARD

OLD)	C109	1-163-015-00	s	CERAMIC, CHIP 0.0033uF 5% 5
001)	C109	1-163-019-00	s	CERAMIC, CHIP 0.0068uF 10%
OLD)	C507	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
907)	C507	DELETED.		
OLD)	C616	1-164-004-11	s	CERAMIC, CHIP 0.1uF 10% 25V
002)	C616	1-164-633-11	s	CERAMIC, CHIP 0.1uF 10% 25V
OLD)	D010	8-719-100-05	s	DIODE 1S2837
907)	D010	DELETED.		
OLD)	D013	8-719-911-19	s	DIODE 1SS119
003)	D013	8-719-400-18	s	DIODE MA152WK
OLD)	D014	NOT IN USE.		
907)	D014	8-719-911-19	s	DIODE 1SS119
003)	D014	DELETED		

(SE-10 BOARD)

OLD)	D015	NOT IN USE.
003)	D015	8-719-104-34 s DIODE 1S2835
OLD)	D016	NOT IN USE.
003)	D016	8-719-104-34 s DIODE 1S2835
OLD)	D018	NOT IN USE.
006)	D018	8-719-911-19 s DIODE 1SS119
OLD)	D115	NOT IN USE.
003)	D115	8-719-104-34 s DIODE 1S2835
OLD)	D203	8-719-109-86 s DIODE RD5.1ES-B3
003)	D203	8-719-105-83 s DIODE RD5.1M-B3
OLD)	IC009	NOT IN USE.
003)	IC009	8-759-209-15 s IC TC4SU69F
OLD)	IC105	8-759-200-81 s IC TC4053BF
007)	IC105	8-759-208-11 s IC TC4053BFHB
OLD)	IC203	8-759-200-81 s IC TC4053BF
007)	IC203	8-759-208-11 s IC TC4053BFHB
OLD)	IC302	8-759-200-81 s IC TC4053BF
007)	IC302	8-759-208-11 s IC TC4053BFHB
OLD)	IC303	8-759-200-81 s IC TC4053BF
007)	IC303	8-759-208-11 s IC TC4053BFHB
OLD)	Q016	NOT IN USE.
907)	Q016	8-729-900-65 s TRANSISTOR DTA144ES
004)	Q016	DELETED
OLD)	Q018	NOT IN USE.
004)	Q018	8-729-901-01 s TRANSISTOR DTC144EK
OLD)	Q115	8-729-901-01 s TRANSISTOR DTC144EK
004)	Q115	DELETED
007)	Q115	8-729-901-01 s TRANSISTOR DTC144EK
OLD)	Q117	NOT IN USE.
004)	Q117	8-729-901-01 s TRANSISTOR DTC144EK
OLD)	Q307	NOT IN USE.
003)	Q307	8-729-901-01 s TRANSISTOR DTC144EK
OLD)	Q308	NOT IN USE.
003)	Q308	8-729-901-01 s TRANSISTOR DTC144EK
OLD)	Q309	NOT IN USE.
003)	Q309	8-729-901-01 s TRANSISTOR DTC144EK
OLD)	R004	1-216-295-00 s METAL, CHIP 0-OHM
003)	R004	DELETED.
OLD)	R005	1-216-097-00 s METAL, CHIP 100K 5% 1/10W
003)	R005	1-216-101-00 s METAL, CHIP 150K 5% 1/10W
OLD)	R018	1-216-089-00 s METAL, CHIP 47K 5% 1/10W
007)	R018	1-216-691-11 s METAL, CHIP 47K 0.5% 1/10W
OLD)	R019	1-216-089-00 s METAL, CHIP 47K 5% 1/10W
007)	R019	1-216-691-11 s METAL, CHIP 47K 0.5% 1/10W
OLD)	R042	1-216-113-00 s METAL, CHIP 470K 5% 1/10W
907)	R042	DELETED.
OLD)	R094	1-216-093-00 s METAL, CHIP 68K 5% 1/10W
007)	R094	1-216-686-11 s METAL, CHIP 30K 0.5% 1/10W
OLD)	R097	1-216-073-00 s METAL, CHIP 10K 5% 1/10W
003)	R097	1-216-049-00 s METAL, CHIP 1K 5% 1/10W
OLD)	R143	1-216-089-00 s METAL, CHIP 47K 5% 1/10W
007)	R143	1-216-682-11 s METAL, CHIP 20K 0.5% 1/10W
OLD)	R229	1-216-079-00 s METAL, CHIP 18K 5% 1/10W
003)	R229	1-216-085-00 s METAL, CHIP 33K 5% 1/10W

(SE-10 BOARD)

OLD)	R330	NOT IN USE.
003)	R330	1-216-073-00 s METAL, CHIP 10K 5% 1/10W
OLD)	R331	NOT IN USE.
003)	R331	1-216-073-00 s METAL, CHIP 10K 5% 1/10W
OLD)	R332	NOT IN USE.
003)	R332	1-216-073-00 s METAL, CHIP 10K 5% 1/10W
OLD)	R554	1-216-075-00 s METAL, CHIP 12K 5% 1/10W
007)	R554	1-216-685-11 s METAL, CHIP 27K 0.5% 1/10W
OLD)	R557	1-216-105-00 s METAL, CHIP 220K 5% 1/10W
907)	R557	1-216-109-00 s METAL, CHIP 330K 5% 1/10W
OLD)	R561	NOT IN USE.
003)	R561	1-216-073-00 s METAL, CHIP 10K 5% 1/10W
OLD)	R562	NOT IN USE.
003)	R562	1-216-090-00 s METAL, CHIP 51K 5% 1/10W
OLD)	R563	NOT IN USE.
003)	R563	1-216-083-00 s METAL, CHIP 27K 5% 1/10W
OLD)	R564	NOT IN USE.
003)	R564	1-216-073-00 s METAL, CHIP 10K 5% 1/10W
OLD)	R565	NOT IN USE.
002)	R565	1-216-049-00 s METAL, CHIP 1K 5% 1/10W

SW-346 BOARD

OLD)	1pc	1-631-793-11 o PRINTED CIRCUIT BOARD, SW-346
004)	1pc	1-631-793-12 o PRINTED CIRCUIT BOARD, SW-346

SW-347 BOARD

OLD)	S3	1-554-482-00 s SWITCH, SLIDE
003)	S3	1-571-908-11 s SWITCH, SLIDE
OLD)	S4	1-554-482-00 s SWITCH, SLIDE
003)	S4	1-571-908-11 s SWITCH, SLIDE

SY-145 BOARD

OLD)	C327	NOT IN USE.
910)	C327	1-102-106-00 s CERAMIC 100PF 10% 50V
004)	C327	1-162-282-31 s CERAMIC 100PF 10% 50V
OLD)	C328	NOT IN USE.
001)	C328	1-102-110-00 s CERAMIC 220PF 10% 50V
007)	C328	DELETED
OLD)	C400	NOT IN USE.
007)	C400	1-162-286-31 s CERAMIC 220PF 10% 50V
OLD)	IC1	8-759-208-85 s IC TMPZ84C011AF
910)	IC1	8-759-208-86 s IC TMPZ84C011AF-6
OLD)	IC2	8-759-746-99 s IC, MBM27C512-25
907)	IC2	8-759-735-58 s IC EVO9800-SYV105

(SY-145 BOARD)

OLD)	R51	1-249-429-11	s	CARBON 10K 5% 1/4W
006)	R51	1-249-405-11	s	CARBON 100 5% 1/4W
OLD)	R84	NOT IN USE.		
910)	R84	1-249-425-11	s	CARBON 4.7K 5% 1/4W
OLD)	R105	1-215-458-00	s	METAL 36K 1% 1/6W
905)	R105	DELETED.		
OLD)	R355	NOT IN USE.		
907)	R355	1-249-417-11	s	CARBON 1K 5% 1/4W
OLD)	R356	NOT IN USE.		
907)	R356	1-249-417-11	s	CARBON 1K 5% 1/4W
OLD)	R357	NOT IN USE.		
907)	R357	1-249-405-11	s	CARBON 100 5% 1/4W
OLD)	R358	NOT IN USE.		
907)	R358	1-249-405-11	s	CARBON 100 5% 1/4W
OLD)	R359	NOT IN USE.		
907)	R359	1-249-417-11	s	CARBON 1K 5% 1/4W
OLD)	R360	NOT IN USE.		
907)	R360	1-249-405-11	s	CARBON 100 5% 1/4W
OLD)	R361	NOT IN USE.		
907)	R361	1-249-405-11	s	CARBON 100 5% 1/4W
OLD)	R362	NOT IN USE.		
907)	R362	1-249-417-11	s	CARBON 1K 5% 1/4W
OLD)	R363	NOT IN USE.		
910)	R363	1-249-425-11	s	CARBON 4.7K 5% 1/4W
OLD)	R364	NOT IN USE.		
004)	R364	1-249-437-11	s	CARBON 47K 5% 1/4W
OLD)	RV2	NOT IN USE.		
905)	RV2	1-237-505-21	s	RES, ADJ, METAL 50K

VO-24 BOARD

OLD)	C526	1-126-157-11	s	ELECT 10uF 20% 16V
904)	C526	DELETED.		
OLD)	Q1	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q1	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q2	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q2	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q4	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q4	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q5	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q5	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q6	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q6	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q7	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q7	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q8	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q8	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q10	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q10	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q11	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q11	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q12	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q12	8-729-119-78	s	TRANSISTOR 2SC2785-HFE

(VO-24 BOARD)

OLD)	Q51	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q51	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q52	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q52	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q57	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q57	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q59	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q59	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q100	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q100	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q106	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q106	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q110	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q110	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q111	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q111	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q112	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q112	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q113	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q113	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q114	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q114	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q200	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q200	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q201	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q201	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q205	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q205	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q206	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q206	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q207	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q207	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q208	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q208	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q209	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q209	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q210	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q210	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q211	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q211	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q400	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q400	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q401	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q401	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q409	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q409	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q410	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q410	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q411	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q411	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q412	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q412	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q414	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q414	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q500	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q500	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q501	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q501	8-729-119-78	s	TRANSISTOR 2SC2785-HFE

(VO-24 BOARD)

OLD)	Q502	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q502	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q506	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q506	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q509	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q509	8-729-119-78	s	TRANSISTOR 2SC2785-HFE

YC-39 BOARD

OLD)	C63	1-107-158-00	s	MICA 30PF 5% 500V
904)	C63	1-107-157-00	s	MICA 27PF 5% 500V
OLD)	Q1	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q1	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q2	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q2	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q3	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q3	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q4	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q4	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q5	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q5	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q7	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q7	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q8	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q8	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q9	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q9	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q10	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q10	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q11	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q11	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q12	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q12	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q13	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q13	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q14	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q14	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q15	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q15	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q16	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q16	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q17	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q17	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q18	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q18	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q19	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q19	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q20	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q20	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q22	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q22	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q23	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q23	8-729-119-78	s	TRANSISTOR 2SC2785-HFE

(YC-39 BOARD)

OLD)	Q24	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q24	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q25	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q25	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q26	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q26	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q27	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q27	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q28	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q28	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q29	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q29	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q30	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q30	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q31	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q31	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q33	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q33	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q35	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q35	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
OLD)	Q36	8-729-600-24	s	TRANSISTOR 2SC403SP-51
003)	Q36	8-729-119-78	s	TRANSISTOR 2SC2785-HFE